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User's Guide TO CP/M SYSTEMS & SOFTWARE

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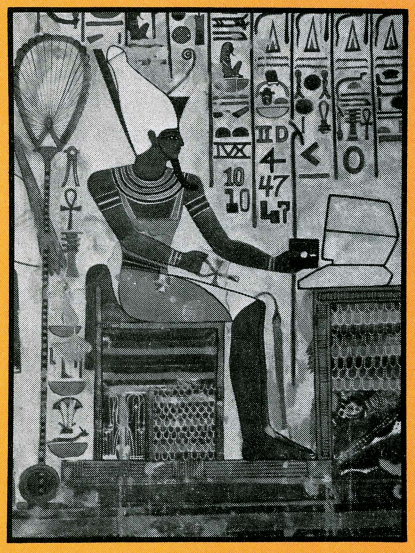

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Contents

Vol.1, No.3 March 1983

Foreword... **Magic Words** 2

For Starters... **Word Processing Power** 4
Tools to control the appearance of your words.

ASCII Alchemy... **Preparing Text For Typesetting** 6
by Tony Bove
Presenting simple codes for preparing text for any typesetting system, to get results that are more creative and cost-effective.

Public Domain Software... **Downloading From RCPM Systems** 13
by Kelly Smith & Tony Bove
Free software is available to anyone who can communicate via computer, modem and a telephone.

Sources... **List of RCPM Systems** 24
by Jud Newell & Kim Levitt
A summary of known remote CP/M software exchange systems using XMODEM protocols for program downloading.

A>STAT↵ CP/M'83 Report 30
by Kelly Smith
Show highlights, and a meeting of RCPM operators with the CP/M User Group and SIG/M to discuss the distribution of public domain software.

Overview and Tutorial... **Word Processing Tools for Writers** 38
by Tony Bove & Cheryl Rhodes
DocuMate/Plus® for indexes and tables of contents, FOOTNOTE® and BIBLIOGRAPHY®, PAIR® for checking pairs of control characters, and The WORD Plus® for proofreading and correcting spelling.

Advice . . . **Your Terminal and Your Health** 52
by J. Ruth Gendler
Your eyes, your posture and back strain.

Tutorial... **MailMerge®: The WordStar® Printing Robot** 56
by Tony Bove & Cheryl Rhodes
A WordStar option that lets you merge mailing list data with text, produce form letters, print mailing labels and control large printing operations.

An Impatient User's Guide... **MailMerge Applications** 76
by Tony Bove & Cheryl Rhodes
A quick reference guide to MailMerge commands and applications.

An Impatient User's Guide... **WordStar File and Print Summary** 80
by Tony Bove & Cheryl Rhodes
A summary of WordStar file manipulation and printing commands.

Letters 84

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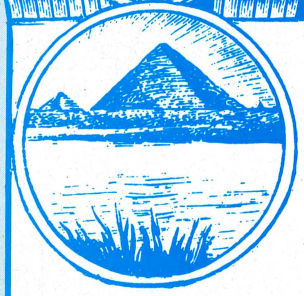


MAGIC WORDS

The Rosetta Stone, found during Napoleon's Egyptian campaign of 1799, was the key to deciphering hieroglyphics. *User's Guide* has been called a "rosetta stone" with its mixture of English and jargon. The purpose is to demystify the jargon — make it readable and understandable.

The Egyptians are credited with inventing one of the primordial stages of "word processing" — ink markings on papyrus. Their culture was also an important link in the development of magic and the use of important words.

Egyptian magic was based on "words of power." They believed that a word or sentence, uttered correctly, had a magical effect.

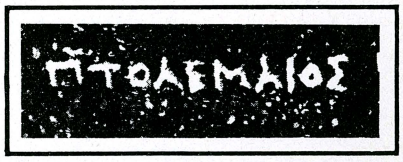
Today we have "words of power" shaping our relationships with others — words in contracts, agreements, disclaimers and other legal documents. Writers use powerful, evocative words to communicate, and footnotes and bibliographies to back up their ideas. Doctors, lawyers, scientists and computerists resort to jargon to explain complex ideas.

Magicians' use of magical words enhanced the mystery surrounding their activities. "Real" magicians used jargon to distinguish themselves from the charlatans, and charlatans quickly adopted the technique.

Jargon lets you be concise and powerful in as few words or letters as possible, and still communicate effectively to those who understand the jargon. The reasons for using jargon can be both noble and practical, but many react to jargon as if it were a pretext for charging expensive consulting fees, or a smokescreen for a charlatan's deceptions.

In selecting, purchasing, understanding and using computers, the use of jargon increases your personal power. The computer itself has the potential to increase your personal power and productivity. Neither the computer nor the jargon that surrounds it is evil, unless the computer and jargon are used in evil ways.

Such is also the nature of magic.



This issue is dedicated to writers. At a recent writer's conference with over 500 in attendance, only 40 people attended a session on opportunities for technical writers. The rest had chosen sessions on various other forms of media and were hearing about the inability to be published in the current buyer's market.

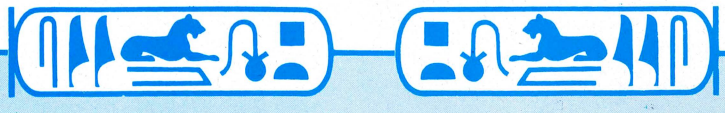
One writer noted the negative tone of many of the conferences — authors don't get published, authors don't get treated well, fiction is dying in the face of pulp... Most of the talks pointed to diminishing returns for writers.

The computer lets you write faster and change your mind as often as you wish without wasting paper and cutting down more trees. The computer lets you bill your customers with a minimum of overhead. The computer itself is the subject of nearly all of the most profitable literature created in this decade.

Now, the lucrative marketplace is personal computers, yet writers are not responding to this seller's market. Computers are scorned by many in the arts, and ignored by many more.

We were there to tell writers that they don't have to be as rich as Isaac Asimov to afford good writing tools. They were walking by some of the best deals we've seen on microcomputers and word processing software packages.

Shown above: *Ptolemy's name, which appears in the Rosetta Stone's Greek text as Ptolemaios (bottom), was the first word recognized in hieroglyphics (top).*



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For Starters...

WORD PROCESSING POWER

In the beginning was The Word...

— The Gospel According to St. John 1:1

Now that I have my words in electronic form, what should I do with them?

In sequence, you would use a text editor such as WordStar to prepare the rough document, inserting footnotes and bibliographic citations wherever necessary You would also be inserting typesetting commands (see "ASCII Alchemy" in this issue), and commands to mark index words and table of contents entries.

After adding the final touches, you would run a superb proofreading program like The Word Plus, which can also correct misspellings in your text.

In a different on-going effort you would be typing the names and addresses of contacts into a mailing list, and typing a library of bibliographic references to match the citations in your documents. You would maintain these files separately. The library of references could be in alphabetical order; the mailing list could be in any order, including zip code or alphabetic by name.

This sounds complicated because there are many alternatives with flexible programs. However, it is possible to achieve remarkable results without doing anything peculiar or complicated — by using *default settings* and following the simplest instructions.

Index, Table of Contents, Footnotes, Citations

DocuMate/Plus is a program described in this issue that works with WordStar files to generate indexes and tables of contents.

While typing a manuscript, or after typing a manuscript, you insert commands of a special type that do not print when you print the manuscript with WordStar. These commands mark index words, headings, and subheadings for the future index and table of contents.

The index and table of contents commands start with three periods (e.g., ***...X entry*** marks the word ***entry*** for inclusion in the index).

FOOTNOTE and BIBLIOGRAPHY are two programs that also work with WordStar files. Both involve the use of separate files; one with footnotes, the other with bibliographic references.

FOOTNOTE lets you put in a separate file, or in your document in any location, footnotes that will be printed on the same page as the notes calling them, using several note numbering options as well as the Chicago Style.

BIBLIOGRAPHY lets you keep a "library" file of references, which several documents can refer to using abbreviated *citations* in the text. BIBLIOGRAPHY organizes the citations and references and creates a bibliography for each document, or exchanges the bibliographic reference directly for the citation.

FOOTNOTE and BIBLIOGRAPHY work well together, especially when you use bibliographic references within footnotes. FOOTNOTE makes use of the WordStar command ***.PA***, a Control command not used by WordStar (***↑PR***), and the special character **@**. BIBLIOGRAPHY uses **%** as a special character. Both programs can be altered to use different characters.

When you use these programs, you will find that you can have control over very complex operations. You can, in most cases, keep your application simple to understand, if you follow the directions to set up typical documents, with footnotes and citations. Both programs may create printing problems if you format your text file incorrectly.

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The index and table of contents entries do not affect your document's printing (unless you've misspelled a command by forgetting the preceding three periods), but they will affect the program's output — the index file and the table of contents file.

Proofreading

PAIR is an easy-to-use program that finds pairs of WordStar underlining commands. It is a common mistake in WordStar to insert a "turn on" underlining command at a place in the document, and forget to "turn it off" with another similar command. PAIR finds any occurrences of a single underlining command that is not followed by a "turn off" command within 200 characters following the first one.

You can alter an OPTIONS file so that PAIR checks for pairs of other Control commands or symbols, such as parentheses and brackets.

For more thorough proofreading, a program called The WORD Plus is more than adequate. The WORD Plus works not only with WordStar files, but with documents produced by any CP/M word processing program.

The program is actually a collection of smaller programs that perform different activities. These include looking up words in dictionaries, proofreading a document, displaying each "misspelled" word and its context, correcting or marking words for correction, adding to and maintaining supplementary dictionaries, hyphenating all long words in a document, looking up rhymes and anagrams, and measuring the frequency of unique words in a document, as well as counting words.

Most writers can find many uses for this program!

Mailing List Merging

The "art' of writing form letters has somehow escaped us until now. Freelance writers have always sent similar letters to many different publishers concerning different pieces. MailMerge can help take the drudgery out of doing this. (Of course, many of you who are not freelance writers can follow the same instructions to write different form letters.)

First, prepare a mailing list of all publishers (or people to receive your form letters). Then, copy a subset of this list to files to make them specific to the type of publisher — computer magazines, science-fiction magazines, book publishers, other trade journals, etc.

Prepare a form letter as shown in the tutorial on MailMerge in this issue. Your form letter can be different than the one shown, but it should contain roughly the same *variables* (words surrounded by **&** symbols.

Using WordStar and MailMerge you can merge the names and addresses from your mailing list with the form letter's variables, and print each individual letter.

Typesetting and Transmitting

Writers who typeset their own work gain more control over the overall appearance and are able to express themselves in choices and styles of typography. Writers are also finding that royalties can be higher if they prepare their own "typesetting mechanicals" (galleys or flats prepared for printing).

The savings over conventional typesetting can be considerable. You save the cost of re-keying the text, and you also save the time and effort spent proofreading the typist's version of your work. What you typed is what you typeset, with only the codes inserted by another typist. You can also save typesetting fees by coding your own work, as we do with this magazine.

To prepare your text (and yourself) for typesetting, learn a few quick rules about it (see "ASCII Alchemy" in this issue). Be consistent about your use of tabs — we use one variable tab (five spaces) to start each paragraph. If you use the printing controls of a word processing program such as WordStar, delete them from the final text you prepare for typesetting.

To transfer your text to a typesetting service, you have several options: transfer the text over the telephone, or provide the typesetter with a floppy disk or tape with the text files. This issue includes a tutorial on MODEM7, the most popular and widely-used CP/M program for use with a modem to transfer data over phone lines.

The program is free from user groups, and it gives you access to the world of public domain (free) software available from call-up bulletin board systems around the world. Use the network to find typesetters who can handle your disk format!

Learn to process your own words and control their appearance.

Preparing Text For Typesetting

Follow a few rules, use a set of simple codes, and prepare your text for typesetting.

by Tony Bove & Cheryl Rhodes

The aim of alchemy researchers was the transformation of the researchers themselves; the celebrated transmutations of lead into gold were "simple demonstrations" of alchemical techniques to release forces in nature.

The aim of alchemy researchers was the transformation of the researchers themselves; the celebrated transmutations of lead into gold were "simple demonstrations" of alchemical techniques to release forces in nature.

In a likewise manner, writers are discovering how computers can liberate them from traditional dependencies on paper publishers. The "transmutations" of electronic information into typeset information serve as demonstrations of the writer's creative powers that were lost while writers stopped being scribes.

Personal computers return to writers the control over the appearance of their text. The accomplishment is typical of ancient alchemical discoveries: as techniques in word processing progress, they become simpler and they require less equipment. Alchemists worked directly with elements; writers now have the power to work directly with individual "pieces" of information.

These pieces, or elements of information, are the *bits* and *bytes* stored in text files. The "periodic table of the elements" of information is the ASCII chart (shown in figure 1).

ASCII stands for the American Standard Code for Information Interchange. In the computer world it is only one of several codes used to interpret binary numbers as bits of readable information; however, ASCII is the universal code for personal computers.

This column should appear in every future issue of *User's Guide* to explore the transmutations of ASCII-coded information into other codes for "expression" in other media. The actual translations and algorithms have been implemented; it is this column's purpose to show *applications* of such translations, and serve as a medium of exchange among today's alchemists.

□ ○ △

If you've scanned recent articles in computer magazines about computerized typesetting, you are already aware of the often-mentioned cost-saving benefits of doing it yourself: no need for re-typing and subsequent proofreading.

Most articles describe how to insert your own typesetting codes. However, we've noticed that no two articles described the same codes! Moreover, many writers leave the coding to the typesetting operators, preferring to provide the electronic text without any codes, and a paper copy showing the text in its suggested format (with subheads and italic words marked by pencil with "spec" codes).

For the production of *User's Guide* we insert our own set of "meta-codes" that we can understand and use in a standard way in every article we produce. These "meta-codes" are in a form that can be converted — *transmutated* — into the specific typesetting codes of a dozen different typesetting services. The *galleys* (output from a typesetter) are ready for layout and paste-up. Only the galleys and final magazine are printed on paper.

There are many good reasons for letting typesetting operators do the complicated coding. There are also many good reasons for controlling the typesetting yourself. Writers who feel a powerful urge to express themselves with appropriate typefaces and styles should consider using their personal computer to prepare the codes as well as the text.

How Complex Is This?

There are levels of involvement with typesetting codes:

1. Codes to mark typeface changes, such as *italics* and **bold type**., and to mark conventional symbols like trademarks® and © notices.

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2. Codes to set up hanging indents and numbered lists such as this one, with multi-leveled subheadings and *formats* for normal and special effects.

3. Codes that directly control horizontal and vertical placement of characters, including tabulated columns, variations on indenting, and unlimited special effects.

Levels one and two are worth trying yourself, whereas level three is for typesetting operators (unless you have lots of patience, can pay close attention to detail and have late-night time to kill).

Level one and two are relatively easy to implement before even talking to a typesetter. The following example shows how we typed the above numbered list:

{lst}↩
1.↩

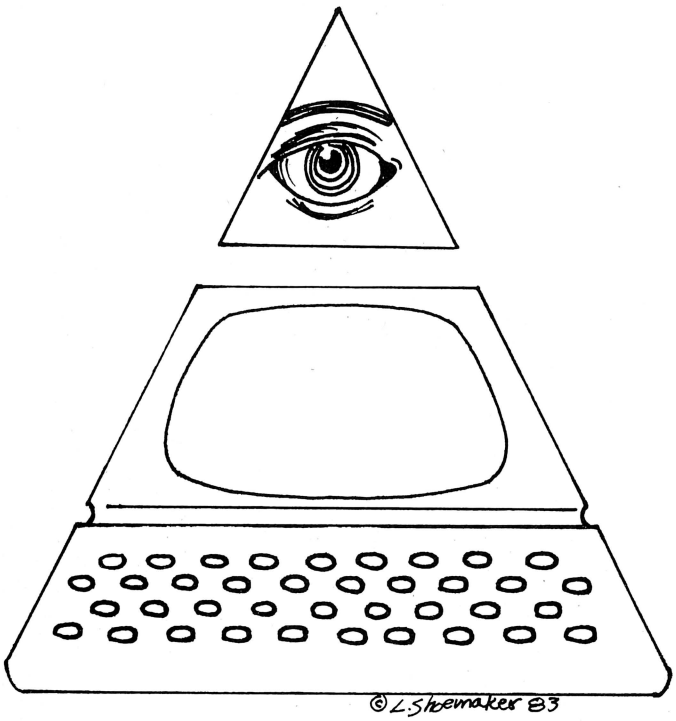
Codes to mark typeface changes, such as {;}italics{.} and {:}bold type{.}, and to mark conventional symbols like trademarks{r} and {c} notices.↩

↩
{lst}↩
2.↩

Codes to set up hanging indents and numbered

lists such as this one, with multi-leveled subheadings and {;}formats{.} for normal and special effects. ↩
↩
{lst} ↩
3. ↩
Codes that directly control horizontal and vertical placement of characters, including tabulated columns, variations on indenting, and unlimited special effects. ↩
↩
{-}{p} ↩

The { and } brackets enclose characters that will be interpreted as typesetting codes that produce special effects. These bracketed fake codes are merely markers or abbreviations for the real codes, which would clutter up the text if typed in full.



For example, {;} changes the typeface to *italics*, and {.} sets the typeface back to the normal face. The {r} and {c} codes fetch the special ® and © symbols.

Other effects are produced by simple characteristics: any line followed by a blank line is not right-justified (e.g., the end of each list item or the end of a paragraph). This non-justified line is controlled by a command known as *quad left*.

Hard-to-code effects, such as numbered and indented lists and paragraph indents, are simplified into *calls to formats*. The {lst} code calls the List format; the {p} code calls the Paragraph format, and the {-} code calls the blank line ("extra leading") format.

"Smart" Text Files

These codes are not the same as others you've seen, although there may be similarities. They are "meta-codes," one step "up" from the various types of typesetter codes. They make a text file almost "smart" enough to know how to typeset itself. All someone needs to know, and at the last minute, too, are the actual codes to substitute for them. Usually a typesetter will be able to easily do the substitutions.

Using "meta-codes," we have the freedom to use codes that make sense to us. We decide which characters and symbols to use between the brackets. You can make up your own set of codes as well — as long as you use some form of start and stop symbols (we use brackets) to set off the codes from the rest of the text (sometimes only one start symbol is necessary).

Since the actual typesetting codes vary from one typesetting machine to the next, you must rely on a specific typesetter if you use actual codes that are specific to one machine.

In the absence of standard codes for different typesetting machines, you should create "meta-codes" that can be found easily by a program that *searches* and *substitutes* the real codes for them.

You can then continue typing text files without consulting a typesetter, and insert markers in the text in places where typesetting codes are needed.

Substitution Operations

The substitutions of real codes for your "meta-codes" can be done on the typesetter's computer or on your system. We perform a two-step substitution process, first from a file with minimal codes and some printer codes to a file with pure "meta- codes," and then from the pure "meta-code" file to the actual typesetting file. The first is done on our system with the OMNIWRITER program, and the second is done on our typesetter's system.

OMNIWRITER lets you perform a *global substitution* (throughout your file) of all your codes *at the same time*. This remarkable program, to be described in a future issue, can save your "search and substitution screen" in a buffer file for use with every text file. This means that you can type a very large substitution table (also known as a *translation table* or *exchange table*) once, and use it on each file by typing a simple set of commands.

Explanations of Some Codes

Nearly all typesetting machines perform standard functions like changing typefaces and justifying lines. A typeface is usually changed to another temporarily, for one or more words, and then changed back to the original typeface. We created several easy-to-remember "meta-codes" for these typeface changes:

%; Change to an italic typeface.
%. Change back to the regular typeface.
%: Change to a bold typeface.

These codes are not too obtrusive in the text. We use them around words to make them italic or bold:

When I need %;excitement%., or need to get %:heavy%. with words...

We change them to {;}, {.} and {:}, respectively, before

Typesetting Metacodes

This chart shows the "metacodes" used in writing, the actual codes substituted for them during final processing, and the meanings of the codes. ↑***PN*** is the WordStar command to insert one RETURN (during substitution operations). Next issue's installment of "ASCII Alchemy" explains the codes and formats in more detail.

Use:	Change to:	Meaning:
%;	{;}	Turn on italic face.
%:	{:}	Turn on bold face.
%_	{–}	Turn on Geneva II bold.
%.	{.}	Turn on regular face.
%+	{+}	Cancel hyphenation.
%=	{=}	Allow hyphenation.
Two RETURNs or ↑***N***↑***N*** RETURN and	{***ql***}↑***PN***	Quad-left the line (use at end of paragraph or to end "hard" lines).
TAB	@↑***PN***↑***I***	Merge command (use at end of paragraph, and after all subtitles and examples). You can also use RETURN and four spaces.
"	"	Every 2nd quote — close quote only. Use " for open quote.

Use:	Meaning:
↑	Up-arrow.
~	RETURN key symbol.
⟩	Right-angle bracket.
⟨	Left-angle bracket.
{+-}	Plus/minus symbol.
{***bul***}	Bullet symbol.
{{}	"{" character.
{}}	"}" character.
{***begin1***}	Begin and set column width (1 column pg.)
{***begin2***}	Begin and set column width (2 column pg.)
{***begin3***}	Begin and set column width (3 column pg.)
{***head***}	Start article title format.
{***p***}	Start paragraph format (only needed once). End each paragraph with RETURN and TAB to start new paragraph.
{***sub1***}	Call subhead level one format.
{***sub2***}	Call subhead level two format.
{-}	One blank line.
{***lst1***} ***1. @***	Call numbered list format, and use merge command **@** to merge rest of format codes to indent paragraph.
{***examp***}	Start example format.
{***ws***}	White space to force quad right of following word or character.
{***marks***}	Start section of trademark notices.
{***symbol***}	Call the special symbol format.
{***end***}	Use to end sections of text, or to end the file.
{***tm***}	Trademark symbol.
{***r***}	Registered trademark symbol.
{***n***}	En-space (size of an "n").
{***m***}	Em-space (size of an "m").
{***1***}	Figure space (size of a number).
{,}	Punctuation space (size of a comma).
{***ql***}	Quad left (left-justify a line).
{***qc***}	Quad center (center a line).
{***qr***}	Quad right (right-justify a line).

transmitting the text to a typesetting service. We also change the combination of a RETURN followed by four spaces to an @ symbol followed by RETURN, to mark the end/beginning of each paragraph (each paragraph ends with RETURN and starts with a five space variable tab). We use OMNIWRITER or WordStar to do these substitutions.

The @ mark at the end of each paragraph controls each paragraph's first and last lines. This mark will be changed to a *merge command* in the typesetter's computer (see glossary of terms).

We also have to mark ends of paragraphs that do not have paragraphs following them — such as the end of a section before a subheading. Along with these lines are "hard" lines that should not be justified — such as poetry, computer examples, or equations. We use two RETURNs to mark the ends of these lines. This method leaves a blank line between lines of poetry, but the results are readable *and* useful for substituting codes.

The substitutions are performed last, when the files are ready to be transmitted or transferred to the typesetting unit. We can use a 300-baud or 1200-baud modem to send text files to typesetting services. We prefer to send a disk to the typesetter to save time and phone charges.

○ △ □

What To Know In Advance

It helps to design *formats* with your typesetter, to be stored on the typesetting computer. A format controls large sections of text and special effects. A format can be as simple as a set of codes to set standard things for each file, or as complicated as a format to control precise typesetting of lines, boxes and graphs.

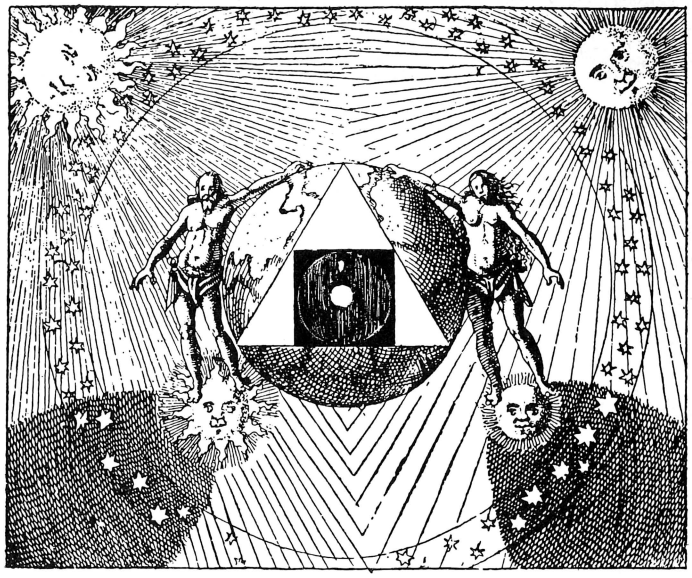
We create a simple *format* to control paragraphs. The format contains codes to "quad left" the last line of the previous paragraph, and indent the first line of the following paragraph. The format also resets all tab settings and indents (other than the first-line indent) to zero, to make sure that these controls are not "out of control."

We create other formats for controlling subheadings, figure captions, hanging indents, indented examples, special symbols (such as the " ↩ " symbol, used to show use of the RETURN key), bulleted lists, numbered lists, and references.

Knowing that you will have a format to control the text, you can determine the places in the text where the format *changes*. You need only mark the starting point and the places where effects change, but you must be consistent with the markings.

For example, imagine coding a numbered list (or bullets — those round black dots). For each item, the number is flush to the left margin. Before the number we place a simple code that calls the format.

After the number, the effect *changes* to a completely indented paragraph — a hanging indent. At the point of change (after the number) we place the @ symbol. At the end of the paragraph, we can place another call to the format (to do another item), or place a call to the paragraph format (to end the list and start paragraphs).



We were impressed by the code-like appearance of alchemist writings... (Alchemists) invented the most perfect codes and the most ingenious methods of cyphering, some of which are still in use today.

— Pauwels & Bergier, *Morning of the Magicians*

Typeface, Point Size and Leading

We use a call to a format at the beginning of the file, to set up all of the "regular" codes, including choice of regular, italic and bold typefaces (from a menu of over 600 typestyles!), the size of indents, the column width, the point size and leading, and other settings. We created three formats for three types of articles: {***begin1***} for one column files, {***begin2***} for two column files, and {***begin3***} for three column files.

Some typesetting machines allow you to set variables and use them throughout your document. You could assign your typeface choices to variables in a {***begin***} format, and change them for all your files in one step by changing the variable assignment in the format.

With this capability, you don't have to decide typefaces until the last moment, and you can re-typeset anything in any typeface easily.

Point size and leading can also be controlled by variables. The point size refers to the size of the letters — 72 points to the inch. The letters are measured from the top of the tallest letter to the bottom of the lowest descender.

Leading refers to the space taken up by lines of text, and is also measured in points. Leading is measured from the base line of the letters to the next base line.

Usually, two points of extra leading are used to separate letters from the line above. Typeface measurements in this magazine are typically 10 point size with 12 points leading.

Most typesetters let you specify the column width, the typeface, the point size and the leading in one command. Sophisticated typesetting machines (like an APS Micro-V with the AKI interface, used at George Graphics in San Francisco) have set variable commands to set values to these variables once, and use the variables in all commands. Use these types of commands in your {***begin***} format.

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What Not To Use

Don't leave WordStar printing codes in your text. Typesetting machines may typeset them, may ignore them, or may get hung up on them. You must delete all special ↑*P* printing effects, all dot commands and dot comments, and all special print control characters.

Don't use "soft" hyphens that are used for printing. Use hyphens only for compound words, and leave hyphenation to the typesetting machine. Spaces between words are usually ignored by typesetting machines, so you can leave your text justified; however, if you use less than four spaces as the variable tab, you may inadvertently substitute paragraph merge codes for spaces between words. Check all text for too many spaces between words.

We routinely strip the "parity" bit off every byte of every text file before transferring or sending them to the typesetting machine. This simple action turns all WordStar "soft" characters ("soft" spaces, RETURNs and hyphens) into regular ones. Many typesetting machines cannot accept them in communication or in translation. To do this, use the PIP command with the ***[Z]*** parameter:

```
A>PIP RESULT.TXT=ORIGINAL.TXT[Z]↵
```

Other "don't"s may not be so obvious. Make sure you use a "0" when you mean zero rather than the letter "O." Make sure you use the digit "1" for one, and not the letter "l." Be sure to run spelling checks before transmitting or transferring your files.

Glossary of Typesetting Terms

column width
The width, usually expressed in picas (a measurement equal to one-sixth of an inch), between the left and right margins of the typeset text.

en-space
The width of the letter "n" in the current typeface chosen. This command leaves a space as if the letter "n" had been typeset. Use for extra spaces between words, or before or after numbers or symbols.

em-space
The width of the letter "m" in the current typeface chosen. Use for extra large space between words, or before or after numbers or symbols.

figure space
The width of any digit in the current typeface chosen. This command leaves a space as if a digit had been typeset. All digits (numbers) are the same width in most typefaces. Use these spaces to line up columns of numbers.

format
In typesetting jargon, a format is a set of codes to control a typical section of text. You would create a format to control all paragraphs, and perhaps another to control all hanging indents and another to control all subheadings. The format is stored and used during the typesetting (so you don't need to store them on your system). You insert calls to these formats where you need them in your text. Most formats involve use of merge codes and commands.

hanging indents
An example of a hanging indent is this very paragraph. The entire paragraph is indented to the end. To code these, use a start code that calls the "hanging indent format," and use markers to show where the paragraphs end.

justified margins
When a paragraph is flush to the right margin, it is said to be "right-justified." In nearly all standard text, the left margin is justified (everything starts at the left margin). The right margin can be justified or "ragged" (not flush).

leading
The height of a line of text, from baseline to baseline, measured in points. Usually the leading measurement is two points higher than the height of the letters.

merge code and **command**
The merge code is used within a format (on the typesetter's computer). You insert a merge command in your text corresponding to a merge code in the format, to control typesetting.

When you call a typesetting format, the format must have a "merge code" and a corresponding "merge command" in the text, that places the subsequent text into the format's control until encountering another merge command. After each merge command, the format codes following the corresponding merge code are in control.

An example: we use a format for this glossary. A merge command before the previous paragraph (before "leading") caused the word "leading" to be typeset starting at the left margin, under control of the format's codes following a corresponding merge code. A merge command following "leading" causes control to pass to format codes that follow the corresponding merge code — which indent the entire paragraph.

paragraph format
In most documents you probably want to indent the first line of each paragraph, and perhaps reset all possi-

Glossary of Typesetting Terms

bly damaging codes (such as tab settings). A marker at the end of each paragraph is sufficient to mark the place to insert a call to a "paragraph format." This format would have codes to "quad left" the last line of the previous paragraph, and indent the first line of the next paragraph.

pica
A measurement equal to one-sixth of an inch. Most expressions of column width and tab width (tab settings) are expressed in picas.

points
A measurement of the size of letters and of leading (space occupied by lines of text). 72 points equal one inch.

punctuation space
The width of any punctuation symbol in the current typeface chosen. This command leaves a space as if a comma or period had been typeset. All punctuation symbols are the same width in most typefaces. Use these spaces to line up columns of numbers or symbols.

quad center
"Quad" means use no extra spaces between words or letters to make up the line. If you "quad center" a line, the entire line will be centered in the column width, with no extra spaces between words.

quad left
Paragraphs that are right-justified usually end with a line that is not right-justified (but is left-justified). The last line usually ends with the "quad left" command. "Quad" means use no extra spaces between words or letters to make up the line.

quad right
"Quad" means use no extra spaces between words or letters to make up the line. If you "quad right" a line, the entire line will be justified to the right margin but not to the left margin, with no extra spaces between words.

tab center
A word set "tab center" is typeset to be centered within a sub-column defined by the tab setting.

tab left
A word set "tab left" is typeset to be flush with the left side of the sub-column defined by the tab setting.

tab right
A word set "tab right" is typeset to be flush with the right side of the sub-column defined by the tab setting.

tab settings
A tab setting defines a sub-column within the column of text. With one tab setting you have two sub-columns: one bounded by the left margin and the tab setting, and the other bounded by the tab setting and the right margin. You set the tab according to the number of picas from the left margin; e.g., tab settings of six, twelve, and eighteen picas would be typed as {***6p,12p,18p***}, and would define four columns: the first starting at the left margin, the second at six picas from the left margin, the third at twelve picas from the left margin, and the fourth at eighteen picas from the left margin.

white space
Blank space used between words to place a word or phrase flush against the right margin.

RETAIL SHOE AND APPAREL

INVENTORY CONTROL — SALES ANALYSIS SYSTEM

- BY SIZE
- 7 DIGIT — USER DEFINED
- CODE NUMBER
- ANALYSIS BY CATEGORY,
- CLASS, SUBCLASS, VENDOR,
- STYLE, AND STORE
- FUTURE CASH REQUIREMENTS
- GROSS PROFIT ANALYSIS
- STORE TO STORE TRANSFERS
- RECOMMENDED TRANSFERS
- SPECIAL ORDERS TRACKING
- SALES ANALYSIS
- SIZE ANALYSIS
- HOT + COLD LISTS
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DEALERS ARE WANTED

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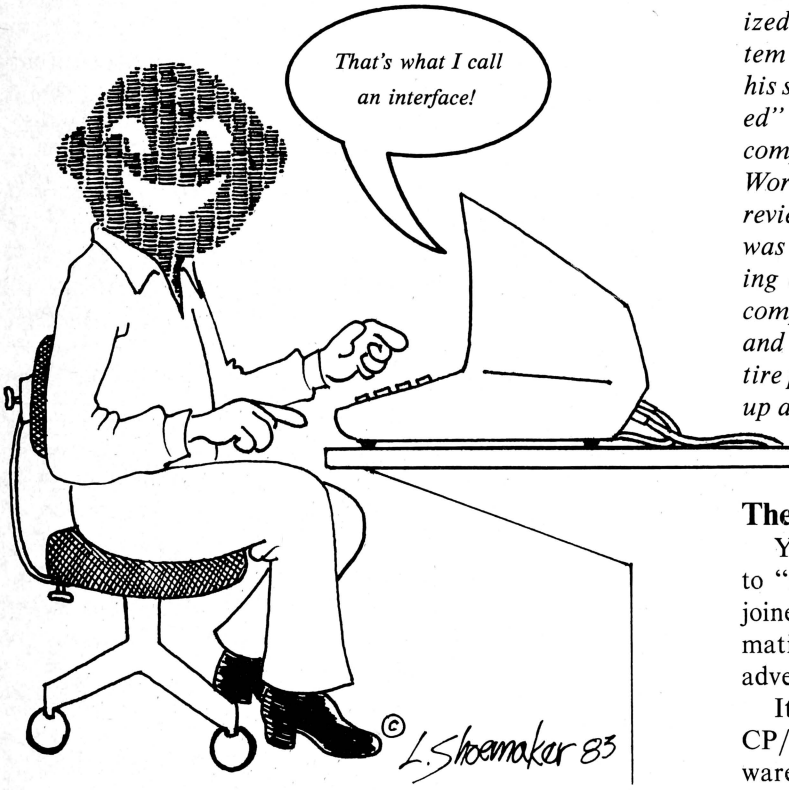
Downloading from RCPM Systems

Free software is available to anyone who can communicate via computer, modem and telephone with the nearest RCPM system

by Kelly Smith & Tony Bove



Although the writers of this article live approximately 500 miles apart and have met only twice in person, their computers have communicated many times over the telephone. In fact, this article was researched, written, edited and prepared for typesetting without using any paper! The entire effort depended on the use of computers, modems, software for transmitting and receiving information, and ordinary telephones on each end. This article describes how anyone can communicate in this manner. Kelly Smith is the owner and operator of a Remote CP/M (RCPM) and Computerized Bulletin Board System (CBBS). Kelly used a CP/M system with WordStar to write a tutorial on calling and using his system. Tony Bove called Kelly's system and "downloaded" (received over the telephone) the tutorial into his CP/M computer. Tony added more and edited the draft using WordStar, and transmitted the final draft back to Kelly for review. Kelly responded with a few changes, and the result was sent to a computerized typesetting machine (without using any paper). Kelly and Tony traded information using computers and a telephone line. You can not only transmit and receive text files, you can also transmit and receive entire programs by calling RCPM systems which are springing up all over the country, and in fact all over the world.

The Key is MODEM7

Yes, finally, someone is going to try to explain MODEM7 to "mere mortals." Don't be so surprised — although we joined forces to write this, we can present only enough information to satisfy beginners and whet the appetite of the more adventurous.

It is estimated that less than one percent of the world of CP/M users know how to receive public domain (free) software for their systems over phone lines. With over one million CP/M systems installed in this country, there must be at least 990,000 people in need of this tutorial.

The simple facts are that the software you can receive is free, and that MODEM7 is the key to receiving the software. MODEM7 itself is free, if you know where to find it.

The software is available from RCPM (Remote CP/M) systems across the country, in Europe, and in Australia. A list of these systems is provided at the end of this article.

MODEM7 is perhaps the most widely modified program

in existence. Two years after its introduction on the bulletin board systems around the country, there are thousands of versions of MODEM7, which in itself is a version of the original MODEM4, which in turn is a revision of the original MODEM.

Some of the unsung heroes of personal computing were involved in the evolution of MODEM7. The original MODEM program was written by the untiring Ward Christensen, a founder of the Chicago area CP/M user's group (CACHE) and the creator of the first bulletin board software system (CBBS).

MODEM7 as we know it today was extensively revised from MODEM by Mark Zeiger and Jim Mills. Kelly Smith was probably involved somehow, as were Dave Hardy, Keith Petersen and Ben Bronson.

With thousands of versions of MODEM7 (including MODEM771, MODEM774, MODEM751, SMODEM51, IE-/MODEM, MODEMH89, etc.), a tutorial on how to use the "program" is nearly impossible. We'll try anyway, since the versions seem to have a few basic functions in common.

A development is underway to standardize these versions, and to standardize methods of receiving MODEM7 from RCPM systems without the use of MODEM7 (using the MBOOT approach). This will be described in a future issue of *User's Guide*.

MODEM7 is not the only program you need to know about to receive public domain software from remote systems. A special version of the program, called XMODEM, runs on the RCPM system. When you call an RCPM system, you must use the system's XMODEM program to link with your MODEM7 program. The details are in this article.

Where Is the Software?

Across the world, day and night, computer systems with blinking modems are listening to telephone lines and answering phone calls.

The systems are called RCPM (Remote CP/M) systems. A "CBBS" is one that also has a computerized bulletin board. In addition to bulletin board messaging, RCPM systems offer software *downloading*. The term "downloading" refers to the direction of the data: from the system "down" to you. "Uploading" is also possible with these systems — you can send programs you've written "up" to the RCPM for general distribution.

The systems are owned and operated by volunteers who call themselves *sysops*. They provide a valuable public service, cataloging public domain software and maintaining expensive equipment that lets you call in and receive software without any charges or hassles. Don't call sysops on their home numbers — they are *not* out there to serve you, but they are graciously providing a call-in service you can learn to use by reading this article.

The RCPM systems usually offer the entire CPMUG and SIG/M volumes of public domain software. CPMUG (CP/M User's Group) and SIG/M (Special Interest Group-/Microcomputers) are the two largest centralized distribution agencies of CP/M public domain software. They distribute software on standard eight-inch floppy disks. However, users of the more popular 5.25-inch non-standard disks (Osborne, Xerox, IBM, DEC, NEC, Sanyo, North Star, etc.) must resort to local user's groups carrying their disk formats, or must use MODEM7 to call the RCPM systems to get this valuable software.

Never underestimate the value of free software. Whether you are computing in Silicon Valley (Siliconia RBBS/RCPM), Yosemite Valley (Pasadena CBBS), the Yukon region (Vancouver CBBS) or Australia (Perth CBBS), use your telephone!

Calling an RCPM System

You must have a modem device attached to your computer. Some prefer *direct-connect* modems (a board within your computer, or an external "black box" attached directly to a phone line), and some prefer the less expensive acoustic couplers for your telephone handset, which can be attached to your computer through the *serial data port* (RS232-C connector) in the back of your computer (most if not *all* personal and small business computers have an RS232-C connector).

Next, you must have the modem program up and running. It is possible to run a modem program other than MODEM7, but if that program does not support what is popularly known as the "Ward Christensen" protocol (the MODEM7 protocol), you can't use the program to download software. You *can* use any modem program to call up an RCPM/CBBS and leave a message on the bulletin board, or read bulletin board messages.

Commercial programs that emulate the MODEM7 protocol include COMMX from Hawkeye Grafix (23914 Mobile, Canoga Park, CA 91307) and RCPMLINK from the Wizard of OsZ (P.O. Box 964, Chatsworth, CA 91311). Both programs provide more than the usual MODEM7 features and are well worth the price. Other MODEM7-type programs are available, but be careful! Some software publishers are selling plain MODEM7, which is available *free* from most user's groups. (A description of COMMX is planned for a future issue of *User's Guide*).

MODEM7 can be configured to dial telephone numbers for you, if you are using a PMMI or D.C Hayes *modem board* (designed for S-100 systems). We use a normal version of MODEM7 with the popular Hayes Smartmodem which does not support auto-dialing, although we've heard of a version that does support it (we don't have SMODEM yet, and we assume you don't either). We supply three explanations below: one for users of any modem (such as simple acoustic coupler modems), one for users of the Smartmodem, and one for users of PMMI or D.C. Hayes modem boards.

Using an Acoustic Coupler

Most MODEM7 configurations will *not* support auto-dialing unless you have a PMMI modem board or the D.C. Hayes modem board (both for S-100 systems). The following tutorial will work with nearly every type of modem.

Some versions of MODEM7 start with a menu, and some do not. If your version starts with a menu, you can type ***MODEM7*** (or the name you choose for the MODEM7.COM file) and select the ***T*** option (for *terminal mode*) from the menu. Type ***T.300*** as described below.

Since many versions do not start with a menu, we present

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the most common way to execute MODEM7 and bring it up in terminal mode:

A⟩*MODEM7 T.300* ↩

The ***T*** stands for *terminal mode*, and the ***.300*** specifies a communications speed of 300 baud (approximately 30 bits of data per second, the standard Bell Telephone baud rate for acoustic couplers and most modems). This baud rate is used for most personal computers and display terminals when communicating over phone lines using inexpensive modems; however, if you're using a teletype machine or "hard-copy" terminal (one that uses paper rather than a display screen), you must select 110 baud by substituting ***.110*** for ***.300*** in the above command.

Once you set your baud rate, you will probably stay at that speed. If you're using an inexpensive modem or acoustic coupler, you may be restricted to 300 baud or lower. Unless your modem allows you to increase the baud rate for faster transfers, you can disregard discussions of changing your baud rate, unless you are getting poor reception (lots of strange characters on your screen). In bad weather, or when there is noise on the line that is interfering with reception, reducing your baud rate (to as low as 100 baud) can help reception (you cannot reduce it to any slower speed than 100 baud).

If you're using an acoustic coupler, turn it on and dial the phone number of your nearest RCPM system (see list in this issue). If the phone listing describes the system as a "CALL BACK" system, let the phone ring only once, and then hang up and call again. If no mention is made of "CALL BACK," simply call the number.

Wait until the system answers with a high-pitched tone. Place your telephone handset in the coupler, and press the RETURN key (ENTER on some keyboards) several times, until the following message appears (sign-on messages vary with RCPM systems — this one is from Kelly's CP/M-Net):

HOW MANY NULLS (0-9) DO YOU NEED?

That's it! You're ready to use the RCPM system (skip the next two sections).

Using the Hayes Smartmodem

The Hayes Smartmodem lets you dial numbers from terminal mode of any communications program. If you connect your Smartmodem correctly, you should be able call the number using MODEM7's terminal mode.

Some versions of MODEM7 start with a menu, and some do not. If your version starts with a menu, you can type ***MODEM7*** (or the name you choose for the MODEM7.COM file) and select the ***T*** option (for *terminal mode*) from the menu. Type ***T.300*** as described below.

Since many versions do not start with a menu, we present the most common way to execute MODEM7 and bring it up in terminal mode:

A⟩*MODEM7 T.300* ↩

The ***T*** stands for *terminal mode*, and the ***.300*** specifies a communications speed of 300 baud. From within terminal mode, you type the following command to "wake up" the Smartmodem's command interpreter:

***AT*↩**
OK

If you get the **OK** from the Smartmodem, you can control your modem and dial the RCPM number using the Smartmodem commands. The following commands set the modem to touch-tone dialing, and dials the number for Kelly Smith's RCPM system:

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OK
ATT↩ (set to touch-tone)
OK
ATD8055279321↩ (dial number)

The number may be busy, or there may be no answer. If so, the Smartmodem hangs up and displays a message saying **NO CARRIER**. If the other end answers the phone with a receiving signal (the modem at the other end is in "answer mode"), the Smartmodem will establish connection and display **CONNECT**. When this appears, press RETURN twice, and you should see the sign-on message (sign-on messages vary with RCPM systems — this one is from Kelly's CP/M-Net):

HOW MANY NULLS (0-9) DO YOU NEED?

That's it! You're ready to use the RCPM system (skip the next section).

(If the other end is busy, you can re-dial the same number over and over again by typing ***A/*** without a RETURN. The Smartmodem will abort the phone call if you type a RETURN while it is waiting for a connection. The Hayes Smartmodem has a remarkable manual detailing its extensive set of commands, and a tutorial on the Smartmodem is planned for a future issue).

Using MODEM7 in Auto-Dialing Mode

If you have a modem that connects directly to the telephone line and automatically dials numbers for you (such as the PMMI and D.C. Hayes modem boards for S-100 bus systems), and your modem program makes use of the auto-dialing feature, you can execute the modem program and type the telephone number. To do this with MODEM7, type the following command to display the menu for MODEM7:

A⟩*MODEM7↩*

A menu of selections should appear, including the "CAL" selection for auto-dialing. Type "CAL" (followed by RETURN), and after the modem detects a dial tone, type the telephone number (including area code if necessary) and press your RETURN key. MODEM7 will try to place the call for you, and will wait 15-25 seconds (depending on the version) for a successful connection (the high-pitched tone) before trying *again*

NOTE: some versions of MODEM7 do not have a menu of selections. To select auto dialing with a MODEM7 version that has no menu, type the following command:

A⟩*MODEM7 C↩*

If the auto-dialing modem is successful in calling the RCPM system, the following message should appear (the message may vary with RCPM systems — this one is from CP/M-Net):

HOW MANY NULLS (0-9) DO YOU NEED?

Signing On

The **HOW MANY NULLS** question is easy to answer if you're using a modern personal computer or display terminal: type a zero.

If you're using a slow "hard-copy" (printing) terminal such as a teletype, you need nulls to be transmitted after each line, so that your "hard-copy" printing terminal or teletype can move its carriage back to the left margin in time to receive the next line. The number of nulls you need depends on the speed of your terminal or teletype — try nine for the slowest speed.

After typing a zero (or other number) for the "nulls" question, the CP/M-Net system asks another question:

HOW MANY NULLS (0-9) DO YOU NEED? *0*
CAN YOUR TERMINAL DISPLAY LOWER CASE? Y

This second question is simple enough: if you can type lower case characters on your keyboard, type ***Y*** for yes. If you type ***N*** for no, everything you type will be in UPPER case.

After answering the above questions, the RCPM system displays a message similar to the one shown in figure 1 (this message is from Kelly's CP/M-Net; other RCPM systems may have different messages).

After displaying the message, the RCPM system should display a **A0⟩** prompt (other RCPM systems may use **A⟩** or **0A⟩**). This prompt is a variation of the CP/M prompt that shows the *user area* as well as the disk drive. You are automatically "logged in" to the disk in drive A, in user area 0 of the disk.

You can use the DIR command to see a directory listing of the disk's user area 0. When you are using CP/M-Net, you are using a real CP/M system with a few commands missing (there are no erase or rename commands to damage files on the disks).

You can see the directories of other disks by typing the DIR command followed by the name of another drive. For example, to see the directory of user area 0 of drive B, type:

A0⟩*DIR B:↩*

There are eight logical disk drives (A:, B:, C:, D:, E:, F:, G: and H:) partitioned within the two physical hard disk drives (four platters each drive). There are also 16 possible user areas on each disk: user areas 0 to 15 (only a few user areas are supported in CP/M-Net for simplicity). You have to explicity type the USER command to "log" into a different user area. For example, to "log into" user area 1 on drive A, type:

A0⟩*USER 1↩*
A1⟩

To move back to user area 0 (where most new programs reside on each disk drive), type the following command:

A1⟩*USER 0↩*
A0⟩

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```
HOW MANY NULLS (0-9) DO YOU NEED? 0
CAN YOUR TERMINAL DISPLAY LOWER CASE? Y

      CP/M-Net (tm) Remote Software Exchange System
-------------------------------------------------------------
  For new user's, please enter: TYPE HOWTO.USE<cr>
-------------------------------------------------------------
 CP/M-Net  is in service,  from 7:00 P.M.  to 11:00  P.M.
 Pacific Standard Time, Monday thru Friday, and 24 hours,
 over  the  weekend,  starting  7:00  P.M.  Friday.  Use
 CBBS<cr>  for messages,  and news on system updates  and
 bulletins.  When  you see the A0> command prompt,  enter
 DIR or  DIR B:, C:, or D:  followed by <cr>  to  display
 each file directory for USER  0.   All programs  are now
 summarized in the DISKMENU.DQC in "squeezed" format (use
 TYPESQ  DISKMENU.DQC to "un-squeeze" it,  and all  other
 files with "Q" in the middle of the filetype. Note, that
 you  may change baud rates on this system at any time by
 entering NEWBAUD and then <cr>,<cr>...for this system to
 acquire your new baud rate.   Enjoy the system, and best
 regards  from  Kelly Smith,  CP/M-Net  System  Operator,
 3055 Waco Ave., Simi Valley, CA 93063 -  (805) 527-9321.
=============================================================
   CP/M is a registered trademark of:  Digital Research
=============================================================
```

Figure 1. *Kelly Smith's CP/M-Net sign-on message.*

If this is your first time, you can be easily overwhelmed by the sheer number of files, many with similar names. In eight logical disk drives, CP/M-Net allows on-line access to at least 2000+ files!

Displaying The Contents of Files

If you want to look at the contents of a file, check its filename extension (the last three characters after the period, if any) before using the TYPE command. If the filename extension is one of the following, you can probably use the TYPE command to see its contents:

name.TXT (text file)
name.LST (lists or listings)
name.ASM (source prg.)
name.ASC (ASCII file)
name.DOC (documentation)
name.BAS (BASIC source prg.)
name.PLI (PLI source prg.)
name.USE (user's guide)
name.PRN (source listing)
name.MSG (message file)
name.LTR (letter)

For example, you can display the contents of the file HOWTO.USE by typing the following command:

A0⟩ *TYPE HOWTO.USE*↵

The HOWTO.USE file explains various features of Kelly's RCPM system. You can use Control-***S*** (hold down the CONTROL key and type an ***S***) as a "toggle-switch" to start and stop the scrolling on your screen.

Many files on the CP/M-Net system are *squeezed* into a special format that takes up less space on the disk. This is particularly true of long text files and program "source" files. If the file is squeezed, you won't be able to view its contents with the TYPE command — you have to use the TYPESQ command ("TYPE a SQueezed file").

NOTE:

The "Squeezer" programs are extremely useful for storing text files in small spaces on a disk, and we describe them later in this article. These public domain programs were written by Richard Greenlaw in the C language (BDS-C Compiler). TYPESQ is by Bob Mathias from ideas derived by Richard Greenlaw's programs.

How do you tell if a file is squeezed? *All* squeezed files have a "Q" in the middle of the filename extension. The following filename extensions are used for files that can be viewed with TYPESQ:

name.TQT (text file)
name.LQT (lists or listings)

name.AQM (source prg.)
name.AQC (ASCII file)
name.DQC (documentation)
name.BQS (BASIC source prg.)
name.PQI (PLI source prg.)
name.UQE (user's guide)
name.PQN (source listing)
name.MQG (message file)
name.LQR (letter)

These are not the only extensions for squeezed files, but they are the usual ones for squeezed files that can be viewed with the TYPESQ command. Any file can be squeezed, including files that do not contain text (ASCII data); however, only textual (ASCII) files can be displayed with TYPE, and only squeezed textual files can be displayed with TYPESQ.

(Executable programs in ".COM" files will not shorten significantly if squeezed, due to the Huffman character encoding algorithm used. Squeezing ASCII files, on the other hand, can result in 35% to 45% reduction of storage space used for the files.)

A Listing of All Files

There is one file that lists all the files and their locations on the disks — the file DISKMENU.DQC. To read DISKMENU.DQC, type the following command:

A0⟩ *TYPESQ DISKMENU.DQC*↩

Any file with a "Q" in the middle of the filename extension is a squeezed file; if you try to TYPE a squeezed file (not using TYPESQ), you may get indecipherable garbage on your screen (use Control-***C*** to stop the display operation). Some RCPM systems, such as CP/M-Net, will tell you that squeezed files cannot be displayed by TYPE — that you should use TYPESQ.

TYPESQ does not allow ambiguous filenames (such as ***.TXT*** to represent all ".TXT" files); only single files may be displayed at a time. However, the scrolling of the display can be turned off and on ("toggled") with the Control-***S*** command as used with the normal TYPE command.

Finding Files and WHATSNEW

Kelly's CP/M-Net System offers 1600 to 2400 programs ("over 120% of the public domain software for CP/M systems" says Kelly, "because many new programs are collected by RCPM operators and then sent to SIG/M or CPMUG"). Old programs (and old versions of programs) are moved from drive A to drive D for archive storage as new programs are added (or old programs updated).

So how do you find programs or files that have moved since you last called the system? If you know the name of the file, use the FILEFIND command. The following FILEFIND command looks for the file DISKMENU.DQC:

A0⟩ *FILEFIND DISKMENU.DQC*↩

The FILEFIND command (a public domain program written by R. Rodman and Dave Hardy) will look *throughout the entire system* (all disks and all user areas) for the filename (or a match if you specify a filematch such as ***.DOC*** or ***MODEM?.****). These searches may take some time, so be patient! You can abort a search using Control-***C***. The DISKMENU.DQC file is usually revised once a month, to keep you informed of location changes of all programs.

As you become familiar with the programs on the system and acquire most of the "old stuff," you may only be interested in new stuff — but the system is a blur of filenames! Although all new files are placed on the disk in drive A, user 0 (the drive and user area you first enter when you call the system), you will not be able to tell what is new and what isn't. An easy way to see what's new is to type the command:

A0⟩ *WHATSNEW*↩

The WHATSNEW command is another public domain program, this one written by Dave Hardy (Technical CBBS). It displays all new files (with the date each was added to the system), as well as old files that were deleted. If you missed an opportunity to get one of the deleted files, look for it on drive D, user 0 (or use FILEFIND). Most files that are over one month old are not deleted, just moved to drive D, user 0 for archive storage.

File Receiving and Sending

There are two ways to receive data over the telephone using a modem program:

1. Use MODEM7 protocols to receive any file, including ".COM" files and programs. MODEM7 detects any errors in transmission, and re-transmits sections when it finds errors. The result is that you receive an exact duplicate of the file.

2. Capture data as it appears on your screen and store it in a disk file. This method works only with text (ASCII) files (documents, program "source" files, etc.) and cannot be used to receive public domain programs that are ready to use (you cannot receive ".COM" files or any non-text files in this manner). The result may not be an exact duplicate.

The second method above does not provide any error detection in the transmission. Random "glitches" in the telephone connection (which are quite common in both long distance and local calls involving data communications) can cause mistakes in the transmission that can actually change characters of data. (One way to test for errors is to perform a CRC check on the original file and the copy you received — described later, under "Utilities").

To receive a program or file and be sure of its accuracy, you need to use the first method described above. Unfortunately, modem programs available for CP/M systems do not adhere to one standard, and their protocols for error detection and re-transmission are not compatible. This means that you must use the same modem program on both ends, or at least versions that use the same protocols.

The same methods apply to sending a file. To send a file

with accuracy, you use the equivalent of method one above, using the MODEM7 protocols. To send a file without accuracy (method two), you do the reverse of capturing the data as it appears on your screen: you send the data typed at your keyboard or "spooled" from a file, without any error detection.

Most (if not all) RCPM systems can use the MODEM7 (XMODEM) protocol (some have additional programs using other protocols). Most RCPM systems use a version of MODEM7 known as XMODEM — for "external modem" (used to handle outside callers, etc.). To send or receive files using method one above and XMODEM, you must be using a version of MODEM7 (or MODEM4), or a commercial program that offers the MODEM7 ("Ward Christensen") protocols (such as COMMX or RCPMLINK).

Receiving With Accuracy

Call the RCPM system and use terminal mode of MODEM7 to get control of the RCPM. After selecting the file or files you want, type the following command (substitute the name of the file you want for SAMPLE.COM) to receive the file from the RCPM system:

A0⟩*XMODEM S SAMPLE.COM*↩

XMODEM vs. x.y.
FILE OPEN - SIZE: x (xxxxH) SECTORS)

The ***XMODEM S*** command causes XMODEM to send the file to your system. XMODEM starts sending data when it hears that your system is ready. To make your system ready, leave terminal mode by typing Control-***E***, and type the ***R*** command from the MODEM7 primary menu to receive the file:

COMMAND? *R B:SAMPLE.COM*↩
AWAITING #01

The ***R B:SAMPLE.COM*** command places the exact duplicate of SAMPLE.COM on drive B of your system.

If your version of MODEM7 does not have a menu, leave terminal mode with a Control-***E*** and type the following command from CP/M (substitute your filename and drive for B:SAMPLE.COM):

A⟩*MODEM7 R B:SAMPLE.COM*↩
AWAITING #01

The ***R*** command sets up your MODEM7 program to receive the file that XMODEM is waiting to send to your system. It may take up to 15 seconds, during which time your MODEM7 program may display messages like **AWAITING 01** and **TIMEOUT**. Once communication is firmly established, XMODEM sends blocks of the file to MODEM7. As each 128-byte (128-character) block is transmitted, MODEM7 displays its number (the numbers are in hexadecimal — from 00 to 09, then 0A, 0B, etc. to 0F, before turning to 10).

When you see the message **TRANSFER COMPLETE** (this may take a long time depending on the size of the file), you can return to the MODEM7 start-up menu (or to the CP/M command line in some versions of MODEM7) with a Control-***E*** command.

You must get back to the RCPM system **A0⟩** prompt before the RCPM system detects no one on the other end and automatically disconnects the call. To do this, return to terminal mode by selecting ***T*** in menu version of MODEM7:

COMMAND? *T*↩

In the non-menu version, you must type the MODEM7 command with the ***T*** option:

A⟩*MODEM7 T*↩

Immediately after entering terminal mode, type at least one RETURN to get the RCPM system **A0⟩** prompt. This tells the RCPM system that you are still connected.

Sending With Accuracy

You can send files to most RCPM systems. The RCPM system can receive files accurately if you send them using MODEM7, and set the RCPM's XMODEM to receive. You must have already established connection in terminal mode.

To send a file that normally has the ".COM" extension (representing a binary program file or CP/M command), you must rename it to have an ".OBJ" extension (e.g., SAMPLE.COM must be renamed to SAMPLE.OBJ). Once renamed and transferred, you will not be able to rename the RCPM system's version of your file. RCPM systems offer no rename commands for good reason: pranksters have been known to send dangerous programs to RCPM systems and then use the programs to wreak havoc. Good-intentioned programmers have also destroyed systems unintentionally by sending programs that do not work.

Once you are ready to send a file from your home disk, type this version of the XMODEM command (substitute your file's name for SAMPLE.OBJ):

A0⟩*XMODEM R SAMPLE.OBJ*↩

This command sets up the RCPM system to receive a file from your system. You should now leave your MODEM7 terminal mode by typing a Control-***E***. If your MODEM7 has no menu, type the following command:

A⟩*MODEM7 S B:SAMPLE.OBJ*↩

If your version of MODEM7 has a start-up menu, select the "send" option:

COMMAND? *S B:SAMPLE.OBJ*↩

MODEM7 displays the following message before sending a file:

FILE OPEN - EXTENT LENGTH xxH
AWAITING INITIAL NAK

If MODEM7 receives the "initial NAK" from XMO-

DEM, the file will be transmitted. If MODEM7 does not receive the "initial NAK" (transmission problems), it will "hang" for awhile. Our version of MODEM7 eventually cancels the routine and returns control to the MODEM7 menu and the command line. However, other versions may "hang" forever unless you restart your system.

If you have to restart the system or restart MODEM7, you should immediately return to terminal mode. When a successful transmission has finished, you should also return to the MODEM7 terminal mode quickly, to keep your connection with the RCPM system. Return to terminal mode and type a few RETURNs.

Sending/Receiving Without Accuracy

MODEM7, COMMX, RCPMLINK, PLINK and other modem programs let you "capture" data as it appears on your screen (data displayed by the RCPM system or host computer, with commands or data you type at your keyboard) and store the data in a file.

Using MODEM7 you enter terminal mode and specify a file to receive the data. If you are now in terminal mode talking to an RCPM, use Control-***E*** to "bounce" out of terminal mode back to the MODEM7 menu, or back to the CP/M command line, depending on your version of MODEM7 (one has menus, the other is stripped of menus).

If your version of MODEM7 has menus, the Control-***E*** command will put you back in the start-up menu. Type the following:

COMMAND? *T B:FEB28.LOG*↩

If your version does not have menus, the Control-***E*** command will put you back at your CP/M command line. Type the following command:

A⟩*MODEM7 T B:FEB28.LOG*↩

To "capture" the data, you must be able to see it on your screen (using the TYPE or TYPESQ command, or program that displays data on the screen). Source files and text files (extensions ".TXT," ".ASM," ".DOC" and others) can be displayed with the TYPE command. A file with "Q" as the middle letter of its extension (e.g., "TQT," "AQM," "DQC" and others) can be displayed with the TYPESQ command.

The "capturing" of the data does not start until you type another command — Control-***Y***. By holding the Control (CTRL, CNTL or ALT) key and typing ***Y***, you "toggle" *on* the capturing of all displayed or typed characters; by typing another Control-***Y***, you "toggle" *off* the capture operation. This allows you to copy only selected portions of a file to your disk file at home.

There is one caveat: in most versions of MODEM7 (usually ones with the start-up menu), you must explicitly type the ***WRT*** command from the menu after leaving terminal mode. This command performs the actual save to the disk file (FEB28.LOG).

If you forget to type the ***WRT*** command, some versions of MODEM7 will tell you to do it, and some versions will do it automatically. However, if you see no message telling you the data was written automatically, you will lose the audited data if you leave MODEM7. You must do a ***WRT*** to save the data in the file before you leave MODEM7.

You can alternatively select the ***RET*** option to return to terminal mode and capture more data, and *then* use ***WRT*** to write the data to the file.

NOTE

If your terminal is a slow printing terminal (or is slow for some other reason), you may encounter "over-run" errors if your terminal and computer cannot keep up with the data rate. If so, do not use the ***V*** (video) sub-option with MODEM7, and you may have to use the ***Q*** (Quiet) sub-option. Read the MODEM7 documentation in MODEM7.DOC, usually provided with the program or available on most RCPM systems.

Other programs are just as easy (if not easier) to use in terminal mode. REACH for Zenith/Heath computers (from the Software Toolworks, Sherman Oaks, CA) lets you select a "spool to disk" file at any time using a function key (F2) while in terminal mode (REACH is nearly always in terminal mode), and turn off "spooling to disk" by pressing the same function key (F2).

COMMX (for nearly any CP/M computer) lets you designate a disk for "logging" operations while in local mode. You can then create a "log file" from its command mode menu, and select terminal mode. A Control-***E*** takes you out of terminal mode and automatically saves the data in the "log file." You can then select another "log file" before terminal mode (to capture subsequent activity to another file), or just select terminal mode (for selective capturing).

COMMX also gives you file commands to rename and delete files, and the ability (in local mode) to type the letter of one of your disk drives to see its directory, including file sizes and the available space on the disk.

The capturing or "logging" method of receiving data only works with text (ASCII) files whose contents can be seen on your screen or typed on your keyboard.

To send data in this manner, you need to use a program other than MODEM7 (COMMX, REACH and PLINK all perform this function).

Utilities

The most popular programs on RCPM systems are the system *utilities*: SD.COM, CRCK.COM (CRCK3.ASM by Keith Petersen), TYPESQ.COM (TYPESQ-11.C by Richard Greenlaw), WASH.COM (a superb file copying and renaming program), DUU.COM (a disk patcher and editing program) and the remaining Greenlaw "Squeezer" programs (described in this section).

Whenever you type the DIR command on Kelly's RCPM system, you are actually executing a program called DIR.COM (formerly SD.COM) which provides more information than the simple DIR command in CP/M. DIR.COM displays the filenames in alphabetical order with each file's size, and it shows a summary of the space used by the files displayed, and the space left on the disk. You can find a copy of this DIR command in the file SD-41.AQM (current ver-

sion 4.1) — which you can download to your system using XMODEM and your MODEM7 program, and then un-squeeze using USQ.COM.

What you un-squeeze will be an assembly language source program, which you can modify and assemble for your system. If you're in luck and the RCPM you call has a ".COM" file version, download that instead, and see if it works on your system without modifications.

CRCK.COM is a utility that performs a "CRC check" on a file to see if the file is identical to another file. CRCK.COM is very useful for checking a backup copy's accuracy. In each user area, a file named CRCKLIST.CRC or THISUSER.CRC lists each file's special CRC number. After receiving a copy of a file, and after receiving the CRCK.COM program itself, run the CRCK program on the copy you have to see if it generates the same CRC number shown in the CRCK list for the original file (use the command ***TYPE *.CRC*** to see the CRCK list).

For example, assume you want to receive the file SAMPLE.OBJ from an RCPM system. First get a copy of CRCK.COM. When you have a copy of CRCK.COM on your home disk, go back to the RCPM system and ***TYPE*** the CRCK list file to see the special CRC number for SAMPLE.OBJ. Remember this number, then set XMODEM and your MODEM7 program to receive the SAMPLE.OBJ file. After receiving the file, type the following CRCK command on your home system after leaving MODEM7's terminal mode:

A⟩*CRCK SAMPLE.OBJ*↩

If the special CRC number for your version is the same as the number for the RCPM version, the files are identical; if not, an error occurred and the files are not identical.

One of the most popular utilities is a set of programs that let you *squeeze* files into smaller spaces, *un-squeeze* the files into larger spaces, and display squeezed files.

The SQ.COM program squeezes files into a special (non-ASCII) format which saves both disk storage for the RCPM system and transmission time (and money!) for users who are downloading the squeezed files (transmission time is cut by as much as 45% for text files and source program files).

Remember, squeezed files are identified by the letter "Q" in the middle of the filename extension (e.g., "TQT" rather than "TXT," "DQC" rather than "DOC," etc.). For example, the file DISKMENU.DOC was squeezed to become DISKMENU.DQC.

To display a squeezed file, use the TYPESQ command (this will only work if the un-squeezed version could be displayed with the TYPE command). To un-squeeze a file, use the USQ.COM program (USQ.OBJ is available for you to receive — rename it to USQ.COM on your system). You will also need the files SQ.OBJ, TYPESQ.OBJ and FLS.OBJ (a parameter list builder for SQ.COM and USQ.COM). Rename these ".OBJ" files to ".COM" files on your system. The file SQUEEZER.DOC contains the documentation for these programs. These files always reside on drive A, user area 0 of the RCPM system.

(*User's Guide* plans an in-depth tutorial of the "Squeezer" programs.)

The NEWBAUD program (written by Keith Petersen and Dave Hardy) can let you change your baud rate (the speed the data travels during transmission). You can't change your baud rate to a higher speed than your modem allows. Some inexpensive modems and acoustic couplers operate at a maximum speed of 300 baud, and so can only be changed to lower speeds of 200, 110, or 100 baud. Some more expensive models allow baud rates of 600, 1200, etc.

Anything above 600 baud is not recommended, although most RCPM systems can handle any baud rate from 60 to 710. When you call an RCPM system and press your RETURN key a few times, the RCPM system automatically acquires your baud rate. You can, at any time (and if your modem allows it), change your baud rate by typing the NEWBAUD command. Just type:

A0⟩*NEWBAUD*↩

Now: change your modem's baud rate switch setting, return to terminal mode, press your RETURN key a few times, and the RCPM system should "lock-on" with the new baud rate. (NEWBAUD proved very helpful when we were trying to transfer files in a bad rainstorm using an acoustic coupler easily affected by line noise. We had very poor transmission at 300 baud, but were able to successfully transmit our files after lowering our baud rate to 100.)

You can also change your connection with the RCPM system to improve transmission. When you call the system, you are in *originate* mode and the RCPM system is in *answer* mode (you originated the call, and the RCPM system answered to allow you to use the system).

Sometimes you can improve the transmission (when Ma Bell is having a bad day) by *flipping* these modes so that you are in *answer* mode and the RCPM system is in *originate* mode. To flip the modes, type the FLIP command (the FLIP program was written by Bruce Ratoff):

A0⟩*FLIP*↩

After flipping the modes, start your transfer operation within 15 seconds or the RCPM system will decide that you have hung up.

Bulletin Board

We arrive, finally, at the program that helped start this computerized bulletin board phenomenon: the original CBBS program written by Ward Christensen (who also wrote MODEM.ASM, which MODEM7 is based on). The remarkable CBBS program was originally written for CP/M systems and is available from Ward Christensen and Randy Seuss for $50.

Try it on an RCPM system! Type the following command after calling any RCPM system:

A0⟩*CBBS*↩

The CBBS program will display help messages, ask questions, etc. A beginner's session is shown in figure 2 (captured

```
CBBS(R) VER 3.3

IF YOU GET STUCK, TRY:  CONTROL-K THEN CARRIAGE RETURN UNTIL
YOU RETURN TO THE MAIN MENU.

The CBBS message system has only three major functions:
--> Entering messages
--> Retrieving message summaries
--> Retrieving messages
Want a quick summary of what to do your first time? y
1.  S - Use the S function to retrieve message summaries (or
Q  for quick (subject only) summaries) Start with message 25
to 50 less than high # printed when you first signed on. Use
control-S to stop/start output.  Write down message  numbers
you want to see.  Use control-K to kill the summary,  return
to menu.
2.  R - Use R function to retrieve messages of interest.
3.  G - Use the G (Good bye) function when you are done.

Remember to use the H (Help) function for details.
NOTE:  When you receive the line:
FUNCTION: (B,C,D,E,G.....) (OR ? IF NOT KNOWN)?
Please  reply ?  the first time so you learn of all the fun-
ctions available.

----FUNCTIONS SUPPORTED----
B=Reprint bulletin                P=Prompt switch (BELL on/off)
C=Case switch (upper/lower)       Q=Quick summary (Msg #, subject)
D=Duplex switch (echo/no echo)    R=Retrieve msgs by #
E=Enter msg into system           S=Summarize msgs
G=Good bye (leave system)         V=Video backspace
H=Help with functions             W=Reprint welcome
K=Kill msg from system            X=Expert user mode
N=Nulls: Set as many as req'd     #=Print caller #, hi msg #, # msgs
The  (S)ummary  function prints 2 lines for each message  in
the system, from a given starting message number.  Use ctl-K
to abort the summary listing.  The Summary prints:

Message number
Number of lines in message
Date Created
From
To
Subject

The (Q)uick summary function prints only msg # and subject.

You will be asked for the starting message number, (you need
not enter leading zeros).    Alternatively,  you may enter a
number of the form -n,  where n is number representing  'the
last  n  messages'.  For example q;-15 would start the  scan
from the 15th most recent message.   (or,  you could type Q,
then press return,  and when asked for the starting  message
#,  reply with -15).   ";" is used to separate "anticipated"
answers.
```

Figure 2. *A beginner's session with CBBS, the computerized bulletin board program available on nearly all RCPM systems.*

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with MODEM7's terminal mode "logging" feature).

The MODEM7-XMODEM Protocol

For you techno-freaks, here's a quick description of the protocol used by MODEM7 and XMODEM.

Data is sent in 128-byte blocks that are sequentially numbered. Each block has an extra "checksum" number (a calculation that differs with the specific data in the block) appended to its end. As the receiving computer receives each block of data, it performs its own "checksum" calculation and compares its number to the "checksum" number sent with the block.

If the numbers are the same, then "all is well" and the receiving computer sends an acknowledgement signal (ASCII "ACK" value, which is 04 in hexadecimal, or Control-F). The sending computer waits for this "ACK" before sending another block. If the receiving computer detects an error (the "checksums" are not the same), it sends a "negative acknowledge" signal (ASCII "NAK" value, which is 15 in hexadecimal, or Control-U).

How does this transmission start? When you start XMODEM to send a file from the RCPM system to your system, it waits for an *initial* "NAK" to get synchronized with your computer. Figure 3 shows what happens after you start XMODEM to send and your MODEM7 program to receive.

```
Sending
computer:
                /SOH/BLK#/  data   /CSUM/      /SOH/BLK..
Receiving
computer:       ↑                   ↘     ↑
     /NAK/                          /ACK/
```

Figure 3. *After starting XMODEM to send a file, and your MODEM7 program to receive a file, the two programs synchronize.*

After the initial "NAK" the sending computer sends a "start of header" (ASCII SOH), a block number in two bytes, the data in the block, and the "checksum" number. The receiving computer responds with an "ACK" if the "checksums" match.

What happens if the block is "NAK"ed? The sending computer, remembering the block number, re-transmits the block. Aha, but what happens if the receiving computer received the block and sent an "ACK," but the sending computer didn't "hear" the "ACK?" You might think that the sending computer would transmit the same block again, and the receiving computer would end up with two identical blocks (when it should only have one); however, this protocol takes care of the problem. The receiving computer, remembering the previous block's number, checks the number of the incoming block and, if it's the same as the previous block, it throws out the extra block.

The transmission ends when the receiving computer receives an "end of transmission" (ASCII EOT, which is 04 in hexadecimal, or Control-D) from the sending computer, usually at the end of the file. If, for some reason, the receiving computer does not "hear" the EOT signal, it will eventually "time out" and return you to normal operation.

NOTE

Most recent versions (version 4.3 and higher) of XMODEM support the SDLC (Serial Data Link Control) type two-byte CRC check on data blocks, and is provided as a sub-option ***C*** in newer releases of derivative MODEM7 programs. This insures an almost 99.99% accuracy in receiving the files that are not corrupted by Ma Bell.

Summary

RCPM systems like Kelly's CP/M-Net can provide most if not all and more of the "collected works," including the CPMUG (CP/M User's Group) as well as the SIG/M user's group volumes of public domain CP/M programs.

The entire SIG/M volumes are currently available on-line from Kelly's CP/M-Net System (new releases of the CPMUG are redundant releases of SIG/M volumes), and more is added monthly as new volumes become available.

The programs contributed directly to RCPM systems are eventually submitted to SIG/M through a secret "clearing house" of new public domain software (a secret RCPM system maintained by Dave Hardy of Technical CBBS, known only by the RCPM system operators to minimize traffic). The sysops access this system on a weekly basis for the newest programs and updates, and therefore, distribute the software from their systems on a controlled basis (every attempt is made to insure that the software is top notch and bug-free!).

What are the most popular programs received by users of RCPM systems? It is difficult to summarize the popularity of any particular software type, but generally, the most popular software appears to be utility programs for software development and maintenance, and BASIC games. Programming languages and applications supported by them are also very popular (e.g., C, Pascal, Lisp, Forth, PL/I, etc.), but the primary interest seems to be in 8080/Z80 assembly language software.

At this point, RCPM systems are used constantly, and their phone lines are nearly always busy (although some are up 24 hours a day). Kelly's CP/M-Net system is only up weeknights from 7PM to 11PM (Pacific Time) and weekends, yet it has well over 500 callers a week, with some phone bills that must be terrific — Australia, Alaska, Canada, Mexico, etc.! Imagine calling a computer in California from Australia and spending two hours receiving files at 300 baud!

Why do sysops create and maintain such systems at their own expense of time and money? Many have the conviction that public domain software should be as free to users as possible. Most feel that telecomputing (using telephone lines or other computerized communications media to distribute software) has evolved to the point where all home computerists can and should participate. Most sysops also do it for their own enjoyment and education.

Anyone interested in public domain software, CP/M systems and computerized bulletin board systems will find RCPM systems fun and rewarding. Those interested in helping to form new de- centralized computer-user communities will see them as a giant step forward in the evolution of the information age.

List of RCPM Systems

A summary of known remote CP/M software exchange systems using XMODEM protocols for program downloading

last revised January 7, 1983
by Jud Newell & Kim Levitt

Abbreviations and Meanings

CB and NCB
Call-back systems are those where a computer and real people share the same telephone line. To contact the people, just dial & let the phone ring until you get an answer. To contact the computer: (1) dial, (2) let the phone ring once, (3) hang up just before the 2nd ring, and (4) re-dial. Call back systems are noted as CB, systems not requiring call back are noted as NCB.

Bx Baud rates are shown as Bx, where x is one of the following numbers:
1 PMMI baud rates (110-710 baud)
2 300 baud only
3 Bell 212A and 300 baud
4 Vadic 3451 and 300 Baud
5 Bell 212A,Vadic 3451 and 300 Baud.
Note that the 212A/Vadic 1200 baud modems may not be compatible with yours. Most of the above systems are using Vadic 3451 Triple modems, compatible with both Bell and Vadic Standard. Sign on the first time at 300 baud to determine the system capabilities. Note also that PMMI's can sometimes be used over 300 baud with 1200 baud systems. PMMI baud rates are: 110, 300, 450, 600, 710.

LDx Alternate Long Distance services are shown as LDx, where x is a code indicating: 1 = None; 2 = Sprint; 3 = MCI; 4 = ITT. You should consider whether a program exchange system is accessible by an a.l.d.s. (alternative long-distance service) when planning to transfer long programs. Charges on SPRINT, ITT/CITY-CALL and MCI are at least 60% of Ma Bell's regular long distance rates.

Disk capacity is shown for reference. Note that disks not noted as HARD may be any combination of floppies, and that hard disks are generally divided into a number of logical disks. Check the system documentation for exact details when logging on.

All times listed are local time.

NORTHEAST

Programmer's Anonymous RCP/M, (207) 839-2337. Ralph Trynor. NCB. 24 Hours. B2;LD1;DSK: 180k. [Gorham, Maine] Interest in new software, modem programs, help and software for the Osborne. (System runs on an Osborne 1.)

TORONTO ONTARIO RCP/M SYSTEM ONE, (416) 231-9538, Jud Newell. NCB. 24 hrs. B5;LD1;Dsk: 10mb Hard. [Toronto, Ontario, Canada] Interest in New and New Releases of Software. Online programs exceed 1000, and online program catalog of 6000 on request programs available. (System formerly named MISSISSAUGA RCPM.)

TORONTO ONTARIO RCP/M SYSTEM TWO, (416) 231-1262, Jud Newell, NCB. 24 hrs. B1;LD1;DSK: 10mb. Hard. [Toronto, Ontario, Canada] System supports extensive database and help systems, as well as over 2mb of BASIC utilities-/games/etc. Operated in conjunction with SYSTEM ONE. (above)

MISSISSAUGA ONTARIO HUG-RCP/M, (416) 231-4174, Toronto Heath Users Group. NCB. 1800-0600 wkdys, 24 hrs wkends. B1;LD1;DSK:2+mb. [Toronto, Ontario, Canada]

Mid-Suffolk RCP/M and Data Exchange, (516) 751-5639, Al Klein, NCB. 1700-0900 weekdays, 1700 Friday - 0900 Monday. B2;LD2,3; DSK:400k. [Long Island, NY] Sysop interested in new programs for all micros. Note phone will be answered voice 0900-1700 Monday-Friday.

SuperBrain RCPM, (617) 862-0781, Paul Kelly. NCB. 1900-0700 wkdys, 24 hrs wkends. B5;LD2,3,4;DSK:300k. [Lexington, MA:] Special interest in Superbrain-adapted CP/M programs.

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Rochester RBBS, (716) 524-1785, Arnie McGall. NCB. 24 hrs. B5;LD2,3,4;DSK:2.4mb. [Upstate New York]

Bearsville Town SJBBS, (914) 679-6559, Hank Szyszka. NCB. 24 hrs. B1;LD1;DSK:4mb. [Upstate New York]

Woodstock RCP/M RBBS. (914) 679-8734. John Doak. NCB. 24 Hrs. (Machine answers after 3rd ring.) B2;LD2;DSK:2.6mb. [Woodstock, New York] Heath H8 System. Sysop interested in all CP/M software, plus ham radio software. CPMUG and RCPM library is available.

Brewster RBBS, (914) 279-5693, Paul Bosshold & Carl Erhorn. CB. 9pm-8am Weekdays, 24 hour weekends. B1;LD1;DSK:500k. [Downstate New York] S-100 based. General CP/M software.

EAST CENTRAL

Flanders, NJ. (201) 584-9227, Ken Stritzel. NCB. 24 hrs, B1;LD2;DSK:26mb Hard. [Northern New Jersey]

Paul Bogdanovich's RBBS, (201) 747-7301, Paul Bogdanovich, NCB. 1800-2300 wkdys, 0800-2300 wkends. B1;LD1;DSK:1mb. [New Jersey]

Remote CP/M and Bulletin Board System of Cranford, New Jersey (201) 272-1874, Bruce Ratoff. NCB. Eves., etc. B1;LD2,3;DSK:2mb. Bulletin Board of SIG/M Group. [New Jersey] General CP/M software; active also as a bulletin board.

Allentown RBBS/RCPM System, (215) 398-3937, Bill Earnest. NCB. 24 hrs. B1;LD2,4;DSK:10mb Hard. [E. Pennsylvania] General CP/M software. Bulletin board of the Lehigh Valley Computer Club and SIG/M Group.

Laurel, MD. RCPM/RBBS, (301) 953-3753, Wayne Hammerly. NCB. 24 hrs. B2;LD2;DSK:600k. [Washington DC Area]

BHEC RBBS/RCPM, (301) 661-4447, Walt Jung, Charlie Schnepf, Harry Barley. NCB. 6pm-9:30am Daily, 9pm Thu-9:30am Fri, 5pm Sat-9:30am Mon. B2;LD2,3,4;DSK:10mb Hard. [Baltimore, MD]

PROVIDENCE RCP/M, (401) 751-5025. Mark Rippe. CB. 1000-2300 Sat., 1100-2200 Sun. B2;LD2,3;DSK:1.2mb [Providence, R.I.]

Arlington RCPM/DBBS of Virginia, (703)536-3769, Eliot Ramey, NCB. 2200-1500 weekdays, random weekends, B1;LD2,3,4;DSK:800k. [Arlington, Virginia] Recent updates and new releases.

OxGate-007 Grafton VA, (804) 898-7493, Dave Holmes. NCB. 24 hrs. B2;LD2;DSK:200k. [Tidewater, VA.] Carries CP/M, TRS-80 & Apple software; plans for setting up a dual system (on one line) with an LNW-80 as well as the CP/M computer. Active as bulletin board.

State College, PA. CUG-NODE, (814) 238-4857, Joe Shannon. NCB. 24 hrs. B2;LD1;DSK:3mb. [Pennsylvania]

MIDWEST

IBM-PC BBS, (312) 647-7636, Gene Plantz. NCB. 1800-0700 wkdys & 24 hrs wkends. B5;LD2,3,4;DSK:200k. [Niles: Chicago area]

AIMS, Hinsdale, Ill. (312) 789-0499, Mark Pulver. NCB. 24 hrs. B1;LD2,3,4;DSK: 10mb Hard. [Chicago area]

Logan Square RCPM, (312) 252-2136, Earl Bockenfeld. NCB. 24 hrs. B1;LD2,3,4;DSK:1mb. [Chicago] Special interest in recent releases and developing on-line databases, with daily change of software on B drive.

Palatine RCPM, (312) 359-8080, Tim Cannon. NCB. 1800-0600 wkdys, 24 hrs weekends. B1 (Thursday 1800-Sunday 1800),B4 (All other times);LD2,3,4;DSK:4.8mb. [Chicago] Emphasis on very recent releases, updates rotated with a second set daily.

Technical CBBS, (313) 846-6127, Dave Hardy. NCB. 24 hrs. B1;LD2,3,4;DSK:3mb. [Detroit area] Emphasis on very recent releases. RCPM sysops desiring access to the passworded RCPM Clearing House system should leave a msg on TCBBS. Active message system

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Royal Oak CP/M, (313) 759-6569, Keith Petersen. CB. 24 hrs. B1 (B5 available on request);LD2,3,4;DSK:10 mb. Hard. [Detroit area] Emphasis on new programs & recent updates of standard progs.

Southfield, MI, RBBS/RCPM, (313) 559-5326, Howard Booker. NCB. 24 hrs. B2;LD2,3,4;DSK: 2.7mb. [Michigan] Special interest in BDS-C programs, doc. files and recent updates of standard programs.

MINICBBS/Sorcerer's Apprentice Group, (313) 535-9186, Bob Hageman. CB. 24 hrs. B1;LD2,3,4;DSK: 500k. [Michigan] Running on an Exidy Sorcerer. Needs password, "SORCERER." Special interest in adapting CP/M software and assorted hardware to Sorcerer systems.

Fort Fone File Folder, (414) 563-9932, Al Jewer, Shawn Everson, Ron Fowler. NCB. 24 hrs. B1;LD1;DSK: 20mb Hard. [Ft. Atkinson, Wisconsin]

Cincinnatti RBBS, (513) 489-0149, Henry Deutsch. NCB. 1800-0600 daily. B1;LD2;DSK: 1.8mb. [Ohio] Specializes in Telecommunications.

West Carrolton RCP/M, (513) 435-5201, Rich Malafa & Bob Drake. NCB.24 hrs. B1;LD2;DSK:11mb Hard. [Dayton, OH]

Columbus CBBS, (614) 272-2227, (268-CBBS), John Walpole. NCB. 24 hrs. B1;LD2,3,4;DSK: 300k. [Ohio] Now running MP/M, on a Tarbell SD controller; occasional slow response means the sysop is also using the system; special interest in BDS-C programs. Also active as a bulletin board.

Pickerington RBBS, (614) 837-3269. Greg Bridgewater. NCB. ??? Schedule. B2;LD2;DSK: 1mb. Running TRS-80 with Omikron. [Ohio]

Mission, KA, (913) 362-9583, Dave Kobets. NCB. 24 Hrs. B3;LD2;DSK: 2mb. [Kansas]

SOUTH

NACS/UAH RBBS/RCPM, (205) 895-6749, Don Wilkes. CB. 24 hrs. B1;LD1;DSK: 700k [Huntsville, Alabama] Run for N. Ala. Computer Soc. at U. of Ala.; general CP/M software.

REDSTICK RCPM, (504) 766-8962, Phil Cary, NCB. W'days 2300- 1900, w'ends 2300-0900. B1;LD2;DSK: 1mb. [Baton Rouge, La.] Message system "REDSTICK" written by sysop. General software.

SOUTHERN CALIFORNIA

Los Angeles RCP/M, (213) 296-5927, Bob McCown. NCB. 24 hrs. B1;LD2,3,4;DSK: 2.5mb. [West. L.A.] System features catalog of the latest CP/M, Apple, Atari, TRS-80 and IBM PC software.

Granada Engineering Group RCP/M, (213) 360-5053, Webber Hall. Kim Levitt. NCB. 24 Hrs. B2;LD2,3,4;DSK: 1mb. [Granada Hills, Ca.] Special interest in CP/M utilities, assembly language programs, hardware/software technical information.

Pasadena CBBS, (213) 799-1632, Dick Mead. NCB. 24hrs. B1;LD2,3,4;DSK: 8.3mb Hard. [Los Angeles Area] Also active as bulletin board. General CP/M software.)

Pasadena RBBS, (213) 577-9947, Rich Berg. NCB. 1600-0700 weekdays, 24 hrs weekends. B1;LD2,3,4;DSK: 1.5mb. Heath H89. [Los Angeles Area]

G.F.R.N. Data Exchange (RBBS), (213) 541-2503, Skip Hansen. NCB. 24 hrs. B5;LD2,3,4;DSK: 2.4mb. [Palos Verdes, CA] Standard CP/M s'ware with special interest in ham radio-related programs. Soon (with MP/M) will also be reachable thru 450 mhz radio.

The MOG-UR'S HBBS, (213) 366-1238, Tom Tcimpidis. NCB. 24 hrs. B5;LD2,3,4;DSK: 1mb. [San Fernando valley, LA Area]

San Diego RCPM, (619) 273-4354, Brian Kantor. NCB. 24 hrs. B5;LD2,3,4;DSK: 2.4mb. [San Diego, CA]

G.F.R.N. Data Exchange (RBBS), Garden Grove, (714) 534-1547, Doug Laing, NCB. 24 hrs, B5;LD2;DSK: 5mb. [Garden Grove, Ca.] Special interest in amateur radio and apple/cpm software, also general interest CP/M.

AnaHug RCPM/CBBS, (714) 774-7860, Bob Mathias, John Secor. NCB. 24 hrs. B2;LD2,3,4;DSK: 10mb Hard. [Anaheim, Ca.]

Simi RCPM, 805-527-2219, Pete Mack, NCB. 1900-2300 PST, Mon- Fri, 24 hrs on weekends. B2;LD1;DSK: 1mb. [Simi Valley, Ca.] Mostly BDS-C programs and occasional new releases of general interest.

CP/M-Net(tm), (805) 527-9321, Kelly Smith. NCB. 1900-2300 (Pacific) Mon-Fri, 1900 Fri to 0700 Mon. B1;LD2;DSK: 20mb Hard. [Simi Valley, CA]

Thousand Oaks RBBS, (805) 492-5472, Trevor Marshall. NCB. 24 hrs. B1;LD1;DSK: 2mb. [Thousand Oaks, CA]

NORTHERN CALIFORNIA

OxGate-001 Saratoga, (408) 867-1243, Paul Traina, NCB. 24 hrs. B5;LD2,3,4;DSK: 2.4mb. [South SF Bay Area] Special Interest in latest releases, also functions as west coast "Sysop's Clearinghouse." (OxNet hub)

OxGate-002 Milpitas, (408) 263-2588, Mel Cruts, CB, 24 hrs. B1;LD2,,3,4;DSK 1.2mb. [South SF Bay Area].

Cro'sNEST RCP/M — DataTech node 004, (408) 732-2433, Robert Kuhman. NCB. 24 hrs. B1;LD2,3,4;DSK: 1mb. [South SF Bay Area] CROMEMCO system two based. Specializing in CP/M, CDOS, and CROMIX software. Many new CDOS programs (never before released to public domain) are available.

OxGate-004 Sunnyvale, (408) 732-9190, Edward Svoboda. NCB. 7:45am-11:00pm 7 days/week. B2;LD2,3,4;DSK: 2.4mb. APPLE II based system [South SF Bay Area] Special interest in communications, Apple CP/M, and Osborne Sysop almost always available.

San Jose Oxgate, (Node 5), (408) 287-5901, Paul Traina. NCB. 1800-0800 wkdys, 24 hrs wkends. B2;LD2,3,4; DSK: 2.4mb. [SF Bay Area]

San Francisco RCP/M, (415) 563-4953, S.F. Avanti. NCB. 8pm-8am 7 days/wk & when not used for business. B2;LD2,3,4;DSK: 270k. [San Francisco, CA] Main interest in CP/M utilities. On-line catalog of off-line CP/M pgms. available.

DataTech Network Headquarters System, (415) 595-0541, Edward Huang. NCB. 24 hrs. B5;LD2,3,4;DSK: 200k. [Box 290, San Carlos, CA 94070 S.F. Bay Area]

Piconet RBBS-RCP/M, (415) 965-4097, Byron McKay. NCB. 24 hrs. B1;LD2,3,4;DSK 2.4mb. Sponsored by PicoNet CP/M group. [SF Bay Area]

RBBS of Marin County, (415) 383-0473, Jim Ayers. NCB. Eves & nites wkdys, 24 hrs wkends. B1;LD2,3,4;DSK: 1mb. [SF Bay Area]

Larkspur RBBS/RCPM, (415) 461-7726, Jim C. NCB. 24 hrs. B1;LD2,3,4;DSK: 2mb. [SF Bay Area]

Napa Valley RCP/M RBBS, (707) 226-6502, Dave Austin. NCB. 24 hrs. B1;LD1;DSK: 600k. [Napa, CA] Supports TRS, Apple, Osborne, Atari and CP/M systems. Also interested in amateur radio and net info.

SOUTHWEST

Dallas RCP/M CBBS, (214) 931-8274, Dave Crane. NCB. 1800-0800 Mon-Fri, 24 Hrs Sat/Sun/holidays. B1;LD2,3,4;DSK: 2.4mb. [Dallas, Texas] Special interest in programs for and discussions of application of micros to science & engineering, especially earth sciences.

Boulder, Colorado RCPM, (303) 499-9169, Jack Riley. NCB. 1900- 2230 weekdays, 1200-2230 weekends. B1;LD2,3;DSK: 32mb Hard. [Boulder, Colorado]

Pinecliffe RMP/M RBBS, (303) 642-3034, Craig Baker. NCB. Irregular hrs, 24 hrs. soon, (try anytime). B3;LD2,3;DSK: ?. [Pinecliffe, Colorado] Login by using "LOGIN" program. On-line databases on such topics as nuclear power, Retrieval system, MP/M-KI mods, interest in active discussions.

Denver CUG-NODE, (303) 781-4937. ? Sysop. NCB. 24 hrs. B1;LD2,3;DSK: 1mb. [Denver, Colorado]

OxGate-006 College Station, (713) 693-3462, Byron Young, NCB. 24 hrs. B5;LD1;DSK: 2.4mb. [College Station, TX]

El Paso Texas RCPM, (915) 598-1668, Sigi Kluger. NCB. 1700-0600 weekdays, all day w'ends. B1;LD2,3;DSK:1.3mb. [El Paso, Texas] XMODEM C:MAST.CAT for list of available files. Diskettes rotated every 2 days.

NORTHWEST

Olympia RCPM, (206) 352-7530. Tim Linehan. NCB. 24 hrs. B1;LD1;DSK: 16mb. Hard. [Olympia, Washington]

Yelm RBBS & CP/M, (206) 458-3086, Dave Stanhope. CB. 24 hrs. B1;LD1;DSK: 250k. [Olympia, Washington]

Edmonton RCPM, (403) 454-6093, Dave McCrady, NCB. 24 hrs (somewhat sporadic .. not answered when system in use by SYSOP), B5;LD1;DSK: 3.8mb. [Edmonton, Alberta, Canada] General CP/M software;some HDOS, Apple and TRS80 stuff available as well.

Chuck Forsberg's RCPM, (503) 621-3193, NCB. 24 hrs. B5;LD2;DSK: ?. [Oregon]

DOCTOR DOBB'S CP/M EXCHANGE RCPM, (503) 758-8408. Gene Head. CB. 2100-0900 weeknights. B2;LD1;DSK: 336k. [Corvallis, Or.] Interested in helping get new modems up and running, and magazine (DDJ) input from readers.(Letters, articles, listings, etc). People phone (503) 758-0279 0900-2100 daily.

Beaverton, Oregon RCPM, (503) 641-7276, (641-RCPM), Dave Morgan. NCB. 24 hrs. B1;LD2;DSK: 26mb Hard. [Oregon] Interest in very recent releases and computer art.

Frog Hollow CBBS/RCPM, (604) 873-4007, David Bowerman. NCB. 24 hrs. B1;LD1;DSK: 1.2mb. [Vancouver, BC, Canada]

Anchorage RCPM, (AMS), (907) 337-1984, Thomas Hill. NCB. 11pm- 9am 7 days/wk. B2;LD1;DSK:12.4mb. Hard. [Anchorage, Alaska] Sysop interested in "just about everything." Has text files on articles written for Lifelines on C: user 6. Voice contact at same phone, 9am to about 7pm.

GENERAL NORTH AMERICA

CP-MIG. On MicroNet, type 'R CP-MIG' or GO PCS-47, Sysops Dave Kozinn, Tom Jorgenson & Charlie Strom are arranging to have MN carry much of the new CPMUG and SIG/M software, plus a newsletter and a CP/M-oriented CBBS.

You will have to buy your own User's Guide.

If you are one of the 700,000+ users of CP/M systems and software, and you don't have a copy of *User's Guide* #1, order back issues today! Our first printing of 10,275 copies means that only one in 70 CP/M users will receive a copy of this collector's item. Use the subscription card in this issue to order at $4 each.

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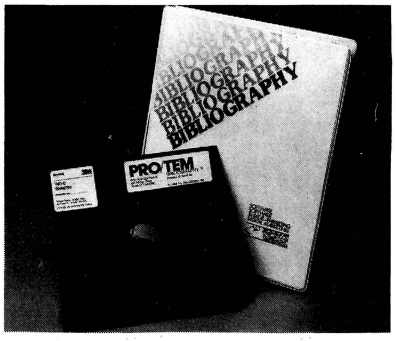

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CP/M'83 Report

Show highlights, and a meeting of RCPM operators with the CP/M User Group and SIG/M to discuss the distribution of public domain software.

by Kelly Smith, Sysop of CP/M-Net

CP/M'83, put on with the sponsorship of Digital Research (creators of CP/M) and the management of National Computer Shows, was attended by over 40,000 people in three days. The show was a huge success, and three more computer shows are planned for San Francisco this year alone.

While the staff of *User's Guide* gathered hundreds of subscriptions at our booth (we were also holding a drawing for disks of public domain software), Kelly Smith squeezed through the aisles to see the latest exhibits. Kelly is the proud owner and system operator (sysop) of an RCPM (remote CP/M system and computer bulletin board) called CP/M-Net (805-527-9321), which has one of the largest public domain software libraries.

Kelly got around to many of the exhibits, attended a breakfast meeting with a large gathering of sysops and user's group organizers (the unsung heroes of the CP/M world), and sloshed through rounds of rumors and late night debate. Here is his report.

Digital Research

Digital Research is rewriting their operating systems (including CP/M-80 and CP/M-86), using Bell Labs "C" high level language on a DEC VAX 11/780 minicomputer system. (Note, that UNIX is also written almost entirely in C. Apparently Digital Research is attempting transportability to the new generation of processors (68000, NS16000, Z8000, etc.).

There were only two demonstrations of systems running "Beta Test" CP/M 3.0 (also known as "CP/M Plus") — many claiming, but few showing. A Sanyo spokesperson commented that they would probably *not* implement CP/M Plus (it needs a minimum of 96K RAM).

CP/M-68K (for the Motorola 68000 processor) was demonstrated on a CompuPro 8:16 system, but it did not appear to attract a lot of attention. It seems that the much ballyhooed "next generation" 16-bit systems are still waiting for applications programmers to write the software. Meanwhile, the 8080/Z80-type eight-bit system is alive and kicking through 1985!

Digital Research's Language Division is moving all of its languages (CBASIC, PL/I, PASCAL MT+) to 16-bit systems, but slowly. Dan Davis (author of PL/I-80) is rumored to be converting *all* the languages to the rival PC-DOS system (also known as MS-DOS) to "find out how bad PC-DOS really is."

Digital Research's graphics package is finally out of the closet, and it promises to be the standard for business systems, incorporating the latest North American videotex protocol (formerly Telidon, now PLP). Look for future "Lisa-like" systems implemented through use of this package.

Meanwhile Gary Kildall (president of Digital Research) is forging ahead in developing the excellent educational language LOGO, used for teaching programming to children and adults.

Friendliness vs. UNIX

CP/M software "user friendliness" is taking two distinct paths: (1) the "menu display in plain English" path (CP+ from Taurus Software (I now have a copy for evaluation), and (2) the "let's make CP/M look like UNIX" path for applications programmers (UNIX is the system of choice for programmers, but hard to learn for beginners and business users).

The UNIX look-alike scheme can appear incredibly complex at first glance to people familiar with CP/M console keyboard input (a friend sitting next to me at a seminar commented that the speaker was "...talking Chinese," and he has been using CP/M for two years). In my opinion, UNIX and "UNIX-like" operating systems will not find mass appeal for some time to come.

Footnote: Tandy/Radio Shack will put all other "current" UNIX/68000 systems houses (Fortune, Callan, Pixel, etc.) out of business in 2 years or less, with the Model 16 system running XENIX (Enhanced UNIX V7 from Microsoft) at a quoted (and guarded) price of "less than $7000." They already have FCC approval on the chas-

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sis and electronics.

The Fake, The Missing, The Portable, and The Miscellaneous

Commodore was showing a highly stylized "4th Quarter release" desk top computer that was actually dummied-up, with a cable out the back connected to an ordinary computer system under the display table. Very little information was available at this time, other than "...running CP/M for under $2000" (photos available, as well as a preliminary sales brochure). The "$900 Color Portable" was *not* at the show.

I have the impression that KayPro, with the nine-inch screen and double density drives (180K each disk), is pushing out Osborne with its five-inch screen and single density. Osborne's double density is now available (also 180K each disk), so the rapid sales of KayPros may be short-lived. I have to admit, the KayPro's screen flicker drives me crazy. However, the ratio of Kaypro II to Osborne I computers shown in the booths running applications was roughly 60/40 (programmers try to write software for the *installed* systems).

There was only one ZORBA and one Jonos Courier portable computer at the show, but I saw at least six to eight Otrona Attache computers (all three have the STD bus expansion interface at a $4000 price tag).

Olivetti and NEC had superior color graphics over *all* others.

At least three companies trying to sell single board computers to OEMs (original equipment manufacturers — companies who buy components and put together whole systems) for package integration (from bare, to A&T'ed boards, prices "negotiable"). The Ferguson "Big Board II" was the most sophisticated, with a SASI interface, at $795.

Large LCDs (liquid crystal displays) do not come cheap. I was quoted $350 for an "attachment" 40 by 8 display. Data sheets are "in-the-mail." SORD is $750 for 40 by 16... Gads!

Sidelines and Observations

There were some unhappy people, who were once part of the start-up of a now-large software manufacturer, crying in the beer at one of the big bashes. It seems that three-piece-suit types have stepped in to make money, and to quote one sad programmer, "it's no longer fun..." Meanwhile, other people are ecstatic about new ventures, including the crew of *User's Guide* and the staff of *PC World*...

Digital Research will see that BASIC is replaced with LOGO in the schools for grades 1 to 10, in 3 to 5 years time... Trust me!

CB-80 and CB-86 will replace CBASIC as the standard language for business applications software writers on microcomputers. PASCAL will die a natural death (along with FORTH), and C will become the next "cult" programming language. After the next three to five years, C will become the accepted standard for many (if not most) applications.

Zilog will be sampling the Z800 (Z80 Instruction Superset, with 16 bit addressing) in 4th Quarter of 1983, and lose their market window again (and again, and...).

Only 10% to 20% of the 700,000-plus users (not including probably 100,000 ripped-off copies!) are aware of the public domain software from groups such as CPMUG or SIG/M (about 50 megabytes of *free software* for CP/M systems).

These same end users are in desperate search for anyone who knows about CP/M and their particular computer. There is no real after-the-sale support from nearly *all* suppliers of low cost computers (there is no profit margin left). Computer clubs and user groups are the alternate source of information, although it seems like the blind leading the blind, as you will find out if you read this tale...

Meeting of the Minds: CPMUG, SIG/M and the RCPM Operators

The following was extracted from a discussion that was taped the morning of January 22, 1983, prior to the second day of the CP/M'83 show. This was the first ever meeting-of-the-minds between the CPMUG (CP/M User's Group), SIG/M (Special Interest Group/Microcomputers) and RCPM SYSOPS (Remote CP/M System Operators). This was also the first time that most of us had met, face-to-face.

The Players (unsung heroes, all), and introductions:

Ward Christensen, the "father" of CP/M bulletin boards, creator of CPMUG, and originator of much of the public domain software ("except the volumes on SIG/M").

Bill Bolton, who started the first RCPM in Australia; Bill Chin who is the coordinator and organizer of the SIG/M user group; Rick Conn, writer of ZCPR and many other useful public domain programs; Ed Currie, who runs CPMUG and the distribution operation as well as Lifeboat Associates and *Lifelines*; Charlie Foster, who started and operates the Pascal/Z user group.

Dave Hardy, the sysop's SYSOP, runs RCPM systems and also coordinates the RCPM systems around the country; Dave Kozinn, one of the sysops on the CompuServe System (which is probably the largest bulletin board system in operation in this country); Ken Levitt, also an RCPM operator and together with Jud Newell also maintains the RCPM list; Sol Libes, editor of *Microsystems* and Chris Terry, technical editor (*Microsystems* hosted the meeting).

Trevor Marshall, an RCPM sysop in Thousand Oaks, CA (Trevor interrupts: "I was the first RCPM in Australia..." Bill Bolton laughs, "But I was the first *legal* one!"); Robert Todd, the Heath Users Group and SIG/M software coordinator for SIG/M.

Bruce Ratoff, who is one of the five people that run SIG/M, and is very active in the Amateur Computer Group of New Jersey; Anthony Skjellum, who writes regularly for *Microsystems* and is the author of much CP/M software.

Kelly Smith, who has the biggest mouth here (much laughter), runs one of the most active RCPM systems in the country, organizes the Valley Computer Club, and is a contributing editor to *User's Guide*.

A Tale of Two User Groups

Sol Libes: "We sometimes talk as if there were only two CP/M user groups, SIG/M and CPMUG, but really there are a very large number of CP/M user groups. Kelly Smith runs one within his

own club (the Valley Computer Club), and there are groups in the Netherlands and in several South Seas countries.

"...I really admire the tremendous things that all of you have accomplished, but at the same time I realize that we have all been operating in a very individualistic and disjointed way, all doing our own thing, without any coordination, and I think there should be more working together where coordination between groups that are working in the public domain area.

"... First of all, why are there two different user groups? How did SIG/M come into existence? CPMUG was founded first, but there was a lapse of activities on the part of the CPMUG, and there were a lot of people creating public domain software and wanting to distribute it, and in order to get that software out, the people started a second group (SIG/M).

"... Not too long after SIG/M got started, the CPMUG came alive again, and now we have two very large and active software distribution organizations that are operating independently of each other."

Eddie Currie: "We (CPMUG) are not particularly concerned with the fact that there are several groups gathering and distributing software. After all, this software is in the public domain. We are not really interested in getting into a competitive situation with another user's group. We merely want to see that people get public domain software that want to use it.

"We (CPMUG) are really interested in distributing software. This user's group business has been a very big responsibility, much more that people really know — a tremendous amount of work involved. People get irate if you don't come out with new releases all the time.

"One of our concerns was that the CP/M User's Group does a good job, and before we could merge groups, we have to be very sure that people will continue to do good work. If it means that more people can get more software (as a result of merging groups), then that's fine. However, If people are going to feel that they have proprietary rights to software that is in the public domain, then I don't want to spend time on it. All we're really interested in is getting the most software out to the most people..."

Ward Christensen: "It is unfortunate that the CPMUG was held onto so tenaciously, when it really didn't exist. This prevented SIG/M from contacting CPMUG and asking if they could take over the distribution. CPMUG wanted to get together with CACHE (*Chicago Area Computer Club*), and we were ready to do it, but it was so long before we got anything to work with. Now CPMUG is back, but it lost momentum and left it open for other groups to get going.

"What is not too well known is that a very small group of people (*notably Jim Mills*) do the things they do without much help. CACHE started very early with CP/M people and interest groups years before anybody else. I was going to CACHE meetings and trying to solicit people to help with public domain software and not having much luck. That's why I invented the CBBS (*Ward is the author of CBBS, the first Computer Bulletin Board System program*), which was oriented for a CP/M user's group. What I hoped for was a way a for people from all over the world to call in and put their fingers on the pulses of what's happening in CP/M. For instance, it list contributions rather than just listing public disks. I've had people call in and say they're interested in reviewing so-and-so's contribution... People didn't realize that I was really soliciting people to do the reviewing and the systems cataloging.

"I hoped for people to contribute more, and for an agency to distribute the software... (*Things were confusing with a lot of programs "scrounged" from the remnants of others.*) By the way, I meant to ask who put up the first RCPM (*remote CP/M bulletin board system for distributing software*)? I thought RCPM systems were muddying the waters of the distribution of public domain software. Somebody said some guy in the south suburbs of Chicago put one up, and I realized that the some guy was me!

"I put MODEM and BYE together and told some people I had a system they could dial into. It was on a Northstar single density system and every morning I'd come down and the disks would be full again. Eventually I took it off the air because people were sending me all kinds of things, yet without any clear goal... (*or documentation of what they had "scrounged" or otherwise revised*).

"I didn't know if it would be appropriate to pass some of these things on to CPMUG. At the same time I had a program that I released to a few close friends, and was working on a new version that was an order of magnitude faster and had real documentation, when I discovered my program in a SIG/M volume, and I was disappointed that my undocumented and undistributed version had gone through the grapevine, which is very feasible with the RCPMs. I think the dream world I hoped for, of authors contributing things and so on is gone. That makes me wonder about the future, what its really going to be like."

RCPM and Disk Distribution

Ward: "It is so easy to call an RCPM system. I've heard people say 'Why should I send things to CPMUG, when I can just send it to Ben Bronson's RCPM?' Unfortunately when they do so, it's often not clear what DOC (documentation) files go with what, and you don't know where in the country the version came from. I guess I have more observations and questions than I have answers."

Bill Bolton: "The point of view I have of this is entirely different. I'm a long way away (Australia) and not really involved in the intrigues, and what I see is a source of material. My concern was to get that out to people, which is one reason why I have my RCPM system up.

"A problem for those who are not in the continental United States or North America is that they can't call in with their systems unless everything can be gotten from one source. I have to keep my phone bills down with international calls."

Ward: "I think the clearing out function is very important because without that we have 9 million parallel developments going on. Of course your going to have that anyway but there will be some point were those parallel developments are combined again..." *(For example it would be nice to inte-*

grate all the new versions of MODEM around the country).

Bill: "The RCPM in our country is very small compared to the rest of RCPMs in the world. America is the land of microcomputer telecommunications. In the rest of the world, it is much more difficult to get things done. There are only four or five public domain access systems in England and a half a dozen in Europe.

"There is no way that a lot of people in Australia will ever get access to the material if it is only available on one disk, because it is so difficult to handle various disk formats. That is the major function of RCPMs, because it doesn't matter what disk format you use, be it for a brand XYZ computer from wherever.

"If you have a communications program that uses the Ward Christensen Protocol (MODEM, MODEM7, etc.), you're all set. In terms of remote communications, this protocol is the universal parkway to distributing CP/M data.

"The RCPM systems (*most use the MODEM7 protocol*) are the only means of access for many users worldwide. Only the people with popular disk formats (*or access to other systems using those formats*) can use the distributed disks.

"I'm a collector and distributor, and I think both sides of the operation have to complement each other. What has to happen in this country is that the RCPM collection system needs to be defined in some way to make sure all the material goes into one essential spot eventually, and also onto a set of disks, and that way you will be sure that all of it is distributed.

"RCPM and disk distribution have to live side by side. I think what we really need to do is work on making sure that they complement each other properly..."

Trevor Marshall: "I maintain an RCPM, and I found that the SIG/M disks and the Pascal-Z and the big BDS-C Users Group disks were downloaded frequently. People taking those programs off my RCPM were not aware of groups other than CPMUG and SIG/M, and how to get the disks.

"RCPM systems have quite a lot to offer. Jud Newell has a system up in Toronto with an incredible amount of stuff, and I call very often. But even at 1200 baud it costs me a fair amount to get the software..."

ARPA Network

Rick Conn: "I'm not sure whether the public knows that the U.S. government has a world-wide network of computers called the ARPA Network (Advanced Research Project Agency). The government is starting to realize the value of public domain software, the enormous savings and costs that can be realized by using public domain software.

"There is more of a commitment these days to try to do something to make available public domain software to all departments of the government, and a few things have happened:

"First, software repositories have been established on the ARPA Net. There are currently two such software repositories, each having over 15 megabytes of files in them. One is at MIT and one is at Stanford Research Institute, and there is a new software repository coming on line in one or two months, which will have 500 megabytes of disk space.

"They already have copies of the entire CP/M Users Group library. They are getting copies of the entire SIG/M users library, and they're copying what is already on MIT, MC, NSI, and KL into this repository.

"The ARPA Network is set up with high-speed communication links between various computers. We can transmit files stored in the ARPA repository to almost anywhere in the United States, and over to Europe, and to Hawaii, and we have links to Australia. The transmission speed is roughly 56 kilobytes, which is reasonable."

The room came alive, with questions and responses from everyone!

"The government is just going to let us use this for free, right?"

"I am using it now..."

"Is this ARPA Net nodal?"

"The problem is getting on..."

"True..."

"Security crack-downs..."

"I really don't know..."

Rick Conn: "Another development is that White Sands is establishing a multiprocessor RCPM system, running at 1200 baud and supporting six independent phone lines, one of them an 800 toll free number."

A voice (unidentified): "Is it Frank Wansha?"

Rick: "Yes, it is Frank Wansha. In fact he's the source of the DEC 20 that has the 500 megabytes of files on it.

"Also we're adopting a new communications protocol called PCPIP, which the ARPA Net is just now switching over to. It is designed for inter-network communications.

"We're already linking through to networks like TYMNET, and I think CompuServe may be touching a couple of our hosts that are already linked to the ARPA Net. This can get involved, and I'm not sure of all the technical details, but with PCPIP we have proven that it is possible to interconnect all these miscellaneous networks. They just recently attempted one in San Francisco in which a packet radio net was partitioned to see how it would survive in a hostile environment, and one half linked with the other half through ARPA Net, through TYMNET, through Germany and France, and back over the satellite to San Francisco.

"At any rate, the PCPIP has been instrumental in linking various computers. Ford Aerospace is using it almost exclusively from DEC PDP/11 computers, linking them very close together. Since the protocol is small enough to run on a CP/M-based microcomputer, once you have it you can communicate with the ARPA Net PCPIP system."

Bill Chin: "What your getting into is typical in communications industries. Right now each country would like to hold onto their own information. You also have the problem of regulating authorities who want to make there own recommendations. That is the reason you have both IBM and the CPIP group in Europe. The currently agreed technology to transfer data between countries has been the X25/X75 protocol. Here in the states we don't have that. As a matter of fact, a lot of people are using X75 — "

Rick Conn: "— although the lower levels of PCPIP use X25 —"

Bill Chin: "The problem is getting all the groups to agree to one standard.

We have the same problem in the 5.25-inch floppy disk industry right now. The only thing saving (distribution efforts on disk) is the eight-inch CP/M standard...

"The only way to adopt a standard is to have enough people join the bandwagon and work together with the changes. Right now each group has avoided the slightest bit of change."

Rick Conn: "That's true, although one way of getting around the problem is to establish gateways — a system that supports two or more different protocols..."

Someone mentioned that the discussion was taking a different direction, and that the problem of a central clearing house and distribution system has not been solved.

Kim Levitt: "There's only two ways to do that: one is to cut down on our RCPMs or to send to just one RCPM system. The other is to copy only by disk, which takes us back to the old distribution problems again.

"(The first way) is to have very tight coordination of the sysops, with Dave (Hardy) not being just a communications point (*the secret sysops RCPM 'clearing house system,' running for two years now*). We need someone as the source, the authority, a clearing house that is more than a clearing house, since we are such a loosely structured group."

Information Dissemination

Bill Chin: "Let me explain the philosophy of the SIG/M group... to make available all valid public information to the user world. Our initial means was to get it out on disk. We tried to collect all the information on disk, but we found that people also communicate by phone.

"SIG/M communicates by phone also, to lots of remote bulletin boards out there. We do not impact them — we make information available to them. We try to put catalogs on as often as we can and give them updated information. I even send a floating library out to regional coordinators — people in specific regions that try to centralize updates, but without success.

"We are just like the CP/M User's Group. We are a small group of about 10 or 15 volunteers. SIG/M is only a special interest group in microcomputing of which we have branched into CP/M, but we're not restricted to that.

"We are trying to put together a standard means of information transfer to the users. Either through disks, if that is the only means a user has, or on the RCPM systems. The idea is to try to do it in a cheap and efficient way. That has to be worked on, and we all have ideas to contribute. Of course we are all running at different speeds as an asynchronous task *(much laughter)*."

Bruce Ratoff: "There is one potential avenue for networking that we're totally ignoring, even though it is valid and very valuable. How many people in this room are radio amateurs?

"The point is this: Canada already has a 'no-code ham license.' The United States is instituting one. I believe the rest of the world is going to follow suit very quickly. And if you can learn computers you can learn enough radio and radio law basics to get one of the simpler licenses. This will give us a networking system for the cost of the equipment, and the cost of the equipment is a small fraction compared to what we spend on our computers."

Ward Christensen: "May I ask, not knowing amateur radio, what sort of bandwidths can you reach on long distances?"

Bruce: "On the upper bands they are reaching 600 baud..."

Bill Chin: "We're talking about a medium producer in transmission, but we have the same problem with that — each country has a different restriction that you can transfer at this frequency, you can't transfer at that frequency...

"Right now the main problem is collecting and trying to settle the dissemination of information. I don't think any of the groups here are adverse to trying to filter all the information. The problem when it comes down to it is getting the people to do it, and whether or not the groups want to pursue it on an individual or joint basis.

"We all have a similar philosophies. I've made an attempt with Charlie (Charlie Foster, Pascal-Z User's Group) to try to combine different user group libraries and to come out through one medium. We've extended invitations to other groups. We're not saying we want to stop you. We'd just like to try to join forces together. What we are trying to do in minimize any more confusion that might occur."

Sol Libes: "One thing mentioned here that could possibly be implemented seems to me to be the clearing house for RCPM users through which they get their software, and I'm wondering if it would be possible to set up one RCPM system for just the sysops use, that would have an 800 number on it. Of course, Trevor pointed out a big hindrance for him is cost."

Eddie Currie: "I think there is something missing here, that everyone here who has a modem and enough money to make long distance phone calls wants that area of telecommunications developed.

"There are a lot of people who don't have that capability. I don't agree with some of the things said here. I don't think it is true that anybody who can scrounge up enough money to get a microcomputer can then get access to public domain software, because historically that has not been the case.

"I'm not interested in satellite communications. I got my first set of CP/M User's Group software without a modem. I got them on (the standard) eight-inch single density disks and I suspect that there a lot of human beings in the world that are in the same category.

"The fact that there are a few of us who can afford to buy 1200 baud modems, and we all have hard disks and all the rest of the stuff, I think is very interesting but I don't think it is relevant.

"As far as I'm concerned, the thing that we are interested in is supporting any effort to get more software into the hands of more users, as long as it isn't in a filter that ends up restricting the bandwagon. I suspect that most of the filters that we are going to apply are going to do exactly that. I think we are going to have to remember that there is a segment of the public that does not get software through computer bulletin boards. The thing that people miss is that sending out disks is a big job."

Trevor Marshall: "Communications networking, as I understand it, is primarily to concentrate the software so an individual can get access to it."

Eddie Currie: "That's a theory

which is yet to be proven. I think it's a question of the natural order, and what you have right now is that a lot of user groups feel that we have some proprietary claims on the things that we distribute.

"I think all of us here need to be realistic about this. I look at all the bulletin board systems in the United States on a fairly regular basis, and I don't see any great order there, or any effort to see that we don't have 57 versions of the same program spread all over the country.

"At the same time we have other systems that have versions that are years old that they are distributing. We have still others that have the latest 10 versions plus every other version that ever came out which are on line for people to get access to. I don't see any semblance of order.

"The CPMUG has a process by which people look at software, they try to post a natural ordering on it, they number the disks, they create catalogs, and people describe what is on the disks. I think this is where you ought to start because if this is in order then you can organize systems like Kelly's, where you have virtually every known volume of public domain CP/M user's software..."

Kelly Smith: "You haven't seen anything yet, wait till Trevor gets going!" *(Expect 160 megabytes of storage capability for user group software on Trevor Marshall's RCPM sometime in March!)*

Eddie Currie: "To just look at the distribution arm of this thing and say what we'll do is start working on that, I think that's a mistake. You ought to go back to the source, get that in order, and then worry about how your going to distribute."

Bill Bolton: "I think there are ways both the RCPM type distribution and this distribution could work together.

"Bill (Chin) has the online catalogs built. What I've done is taken the catalogs and put them together (I've had to go back through and strip most of them down to single lines). Now I can run FIND with them (FIND is a string search utility for finding text in a file), and the callers on my system can type ***FIND STAT***, and it will call up every reference to STAT in all the catalogs. However, I had to do it with one line references, because if the catalog reference goes over two lines, they would miss the second line which might have what they're looking for.

Eddie Currie: "You're really saying the same thing I was saying — get these groups in order and then the RCPMs can cooperate amongst each another."

Bill Bolton: "What I'm trying to say is that user's groups can complement the RCPMs, that's one direction of it. In the other direction, the RCPMs have to feed material in a complementary fashion."

Eddie Currie: "What I'm saying is, if I went right now to Ward and said lets go around right now and pick up all the public domain software for all the different user groups and append it to CPMUG, we would get letters, complaints, bombs, all kinds of things. All from people who individually and perhaps collectively in some circumstances claimed that all they were really interested in was the distribution of software. A major obstacle has been that people have put proprietary claims on things.

"The CP/M User's Group is not prepared to step aside, at this time, and let any other user group organization function in the capacity in which it's functioning.

"We'll certainly talk to people about ways to (combine this effort), so that we can do a more effective job of distributing the stuff, but our concern is that we want the function to go on, on a world wide basis, and continue to be supportive.

"I have taken a position, and I think some other people should take a position. Maybe we ought to look at those positions and see if there is some way to pull all this together. Maybe the other thing to do is to find a group of people who are willing to go out and talk to all the different factions, and see if there is some common thread, so that at least we can get, we may not get 100 percent of what we want but maybe we'll get 5 percent and maybe get some things going in that direction. If we can't do this, we might as well continue as we are."

Anthony Skjellum: "I would like to address the possibility of having a kind of clearing house. All it would serve to do is to give unique numbers to each file. When a version is created the author of the version would acquire a new number, call a central clearing house, an 800 number or something, and it would be recorded in the clearing house that a new version had been created.

"Periodically the systems operators could acquire a new list to know exactly what had been changed there would be an opportunity to always know what was current. Everything would be labeled and the person that got a file would have a number on that file and would know if he had the most current version.

Trevor Marshall: "There is some problem to that — the latest version quite frequently doesn't work properly (laughter). This is where the CP/M User's Group is so good, in that Ward has looked at the version..."

Bill Chin: "Every users group here has made some attempt of some sort. The CP/M user group when it first started was a great idea, a central collection point of distribution —"

Eddie Currie: "It's still a great idea!"

Bill Chin: "I'm not disputing that. SIG/M came out to enhance it, we had a little more organization, we tried to clear things up. Programs were put out there, but documentation didn't exist, so people didn't know how it worked, or if it worked at all, or what problems there were.

"We tried to put that right in front of the user, so that the user who just picked up the program won't scream at the user group about why it doesn't work...

"What we're trying to do is put out (information on) public domain programs which people can use confidently on their systems, with restrictions if there are any. We're just trying to make it available to users. We're now trying to do an interactive catalog service, so to speak. We've adopted the same philosophy, we all have good ideas."

Charlie Foster: "I'm a one spark plug user group. I have 22 disks that I created myself and have two more in the hanger. I agree that we should state a position then follow through, then people can rely on you. If you have a position you have a starting point. My

point has always been that public domain is free. So I've given my stuff to anyone that wants it. Bill Chin is the only one who came to me and asked me to give my stuff to him in bulk. I'm willing to give that to anybody.

"The people that asked for my software are invariably unique, like engineers, doctors, who don't have time to get on RCPMs. Quite frequently I get secretaries calling me asking for three disks of this, four disks of that. They have modems, most of them, but they don't have the time to mess around, so they have the secretaries ask me for some disks.

"I'm throwing that in for information sake, that as a one man outfit my time and expenses are limited. We need a central distribution system based on a standard size, the single density, eight-inch disk, the core of the main stream. We need an outfit that I, as a one spark plug user group, can funnel all my stuff to you, and I don't care what you do with it."

Anthony Skjellum: "If we had a central clearing house that collected stuff and we had certain people that have different systems and disk formats that also have modems that could receive that stuff and put it on other disk formats, we don't have to have a lot of equipment involved, and we could get it on."

Bill Chin: "What you're suggesting is what we're doing already, in the Amateur Computer Group in New Jersey. We have our own distribution list of people who are willing to do the work or have the information available. Our little subgroups are maintaining libraries in most disk formats.

"The problem with any organization is that the library starts to multiply when it's in a small format, and that indirectly contributes to the problem. The problem is, that there are many different groups and different disk formats."

Kim Levitt: "One of the things we can do, is organize ourselves along some matrix lines, where people try to divide their software into various functional categories. When someone wants to work on software in a specific area, you must coordinate, and if nothing else tell people via remote bulletin boards which is the latest version that works.

Ward Christensen: ""That has a good basis in history too. In the area of publishing, particularly in the area of lets say, chemical things. It became impossible for an engineer to keep up with what was published for chemistry. This new thing came out called Chemical Abstracts.

"I don't think it's possible to have a central clearing house. I don't think people are going to be willing. My goal is to have every contribution have form with it, so that even if the person doesn't want his address published you know it, so that if there is a serious bug in it, you can get back to him.

"There are people who will just want to take a piece of code they have written and hand it off somewhere. I don't think a central clearing house is practical, but I would like to see a second level like a consolidation of reviewing. I get requests for *The Best of CPMUG* every month. I'm sure you get the same from SIG/M. So why not put together *The Best of Public Domain*, and have it published."

Kelly Smith: "I would guess that 20% of the people out on that floor (CP/M'83 show) are aware of public domain software for CP/M machines."

Dave Kozinn: "Do you think the number is really that high? Seriously, I think 10%."

Kelly: "Lucky for us the other 80% are oblivious to what is going on, because if they find out, we're in real trouble. Lucky for the RCPM system operators, there are less than 5% out there that know what can be done with modems. I get two to three calls a week from users that have the MODEM program or they have MBOOT3, and they have a Radio Shack Model II or something, and they don't understand assembly language much less know how to test status bits. I talked to a guy for two hours Wednesday night and got him up and running with MODEM7 version 10,324!"

Ward Christensen: "My favorite question is: What's an initial NAK?"

Kelly: "If we would want to standardize on something, why don't we take Keith Petersen's MBOOT3 and put in equates, available in a couple magazines, for all the ports, possible for all those machines out there, and get everybody off my back!"

Ward Christensen: "The original version of MODEM is written like CP/M with a BIOS (Basic Input/Output System). In other words take the first 400 hex and the modem BIOS, and the stuff after that is a piece of the code that is totally independent of the modem."

Kelly Smith: "Anyway, I'm representing *User's Guide* to CP/M, a magazine of tutorials and reference guides, and we can publish information, and so can *Microsystems*, *Lifelines* and any other publication. Let's put together a common base for the MODEM7 program.

"Also, I have a question — how do manufacturers look at this?"

Someone: "They seem to have no interest."

Kelly: "Would manufacturers be willing to distribute software on their disk formats if we make it available?"

Ward: "A lot of them are bundling the software, and if we gave them the CP/M User's Group software..."

Dave Kozinn: "One problem is a proliferation of the necessary communication packages that nobody knows what to do with, and that includes your MODEM program and everybody's hacked version of it.

"Build a modem program with three levels, with a BIOS level, the modem program itself, and a level for people to add on their hacks to the MODEM program so that they can have another 7,962 versions of it. Then you take source code and you document it and you specify what your next version is and so forth.

"Then the user's group links all the files together, so that when you distribute you distribute the version changes, the version number, and the link."

Ward Christensen: "You're not going to get people to call in and get a number or something. The only way is an after the fact organization system."

Dave Kozinn: "Well, how does a disk get out from SIG/M, do you throw it out the window and hope someone picks it up?"

Ward: "How do you coordinate the 45 people in the country right now that are working on their own variations of MODEM? You can't get them to call

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in and say can I please have a number for mine. They make what they think are good changes and send it somewhere."

Dave: "But you have three distribution channels: SIG/M, CP/M User Group and RCPMs. Somewhere I may create a program and run it on my system, calling it whatever. But if I want to distribute it through SIG/M or CPMUG or RCPMs, one of those three distribution channels can be coordinated."

Eddie Currie: "Kelly made an interesting point which I think we lost sight of here. He made the comment in passing that it is fortunate in some respects that only 10% of the users know about his RCPM system.

"I don't think public domain software in the future will be served by the people here in any significant way, because I don't think you guys can keep up with the volume of users and the volume of software and the number of different distribution methods that are going to have to exist to supply the stuff.

"The distribution system is going to have to be a lot greater that it is right now. I think its unfortunate that we've spent over an hour talking about this and we still haven't come one inch forward on what we can do to get things in a forum so that they can be sent out in a meaningful way through existing channels.

"The bulletin board systems are more interesting to talk about than users groups, because user groups are largely manual systems that are very archaic, very painful to deal with and the demands of peoples time and the volume involved are incredible. Traditional distribution is not very exciting, yet that's an area where a large number of the problems seem to be resolved.

"There needs to be a forum where both organization (user groups and RCPMs) get together for discussion. Maybe there needs to be another forum by where the user groups themselves get addressed.

"I don't see an effective result from trying to tie the bulletin boards together. There were some good starts but they don't seem to be very effective. If you look at the amount of stuff available on bulletin boards, you realize that some poor user who calls in at 300 baud to get some of this stuff has to pay at least $300 to get it.

"There are some of fundamental issues. One is how do we get the stuff from the contributors in a form that would give us the greatest distribution. The second is how do we make the remote bulletin board systems (RCPMs) more effective.

"The third is that if it is in the interest of everybody to keep bulletin boards secret in order to keep them from being completely inundated, that's a serious issue that should be addressed."

David Kozinn: "The Digital Equipment Corporation had problems, and they set up the DECUS User's Group. Maybe if we approached Digital Research they would be willing to help finance us in setting up a clearing house, maybe even funding a staff to assist."

Sol Libes: "I think it's feasible that we could set up one system as a clearing house for RCPM users, that has an 800 number. The RCPM operators would be given passwords for this clearing house system, and only those people. Those systems would operate in a coordinated manner, and those operators would be in regular communication in an organized way with each other, and have some control over latest versions of MODEM and whatever, at least on the systems your going to coordinate."

Dave Hardy: "I have a system that is already in use (the secret sysop's RCPM system). I have about six megabytes of storage on it.

Kelly Smith: "We should also put together a maximum committee of four people to act as a high pass filter, in addition to the job that Ward is doing.

Sol Libes: "I think it's time we call a halt to this meeting, and I think we'd better really work on our experience! I sure want to thank you all..."

* * *

User's Guide plans to publish information on public domain software in every issue. With the help of RCPM operators we will coordinate information on new releases, and provide tutorials and reference guides for newcomers to the world of public domain CP/M software.

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Word Processing Tools For Writers

Each is given a bag of tools,
A shapeless mass and a book of rules;
And each must make, ere life is flown,
A stumblingblock or a steppingstone.
— R. L. Sharpe (1890)

by Tony Bove & Cheryl Rhodes

In this article we describe five programs described as "writer's tools" for use with word processing programs. All five programs work in conjunction with WordStar®, and two of them work with other word processing programs as well.

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FOOTNOTE® and BIBLIOGRAPHY® help you organize footnotes and bibliographies for documents. PAIR® helps you find WordStar control character pairs such as start/stop underlining, to make sure you've used them correctly. These three programs are from Pro/Tem Software, Inc.

DocuMate/Plus®, from The Orthocode Corp., lets you create a multi-leveled index and a table of contents for one or more WordStar files.

The WORD Plus®, from Oasis Systems, is a bundle of programs that provide spelling checking *and correction* with a 45,000 word dictionary, automatic hyphenation, help with homonyms, anagrams, rhymes and crossword puzzles, word counts and word frequency statistics.

FOOTNOTE, PAIR and DocuMate/Plus are designed for use with WordStar text files. BIBLIOGRAPHY and The WORD Plus are set up for WordStar text files but will also work perfectly well with files from other text editing and word processing programs for CP/M systems.

FOOTNOTE®, BIBLIOGRAPHY®, PAIR®, DocuMate/Plus® and The WORD Plus®

Writing Tools and Computers

For writers who are new to computers, the computer can increase or decrease productivity depending on the usefulness of its software. With the choices on the market today, they either have to learn to use the "uncooperative" programs that are packed with features and complexity, or settle for easy-to-learn programs with limited capabilities.

After conquering the intimidation of the nasty programs that expect users to be more knowledgeable, writers new to computing must also prepare themselves for some unsatisfied expectations.

In particular, most word processing programs do not provide indexing capabilities. After spending thousands of dollars on computer equipment and using it to write a comprehensive guide to child-care centers, the writer must feel frustrated to have to index the book with conventional index cards.

A fear of mangled text can also prevent a writer from making full use of his or her computer.

One problem with many text formatting programs and "writer's tools" is the fear that you will hand your text file over to some beast of a program that will eat portions of your text, spew out unknown quantities, and leave its muddy footprints in unlikely places. If you don't know what you're doing, your text file may end up a mess.

Another problem associated mainly with print formatters is that the print control commands are hard to remember and they clutter the text.

Some programs can actually decrease your productivity by making it nearly impossible to print documents with such things as footnotes in the right places. Printing text properly requires thought, planning and a bit of programming — three activities that get in the way of actual writing.

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mands will not work with typesetting equipment. ▷

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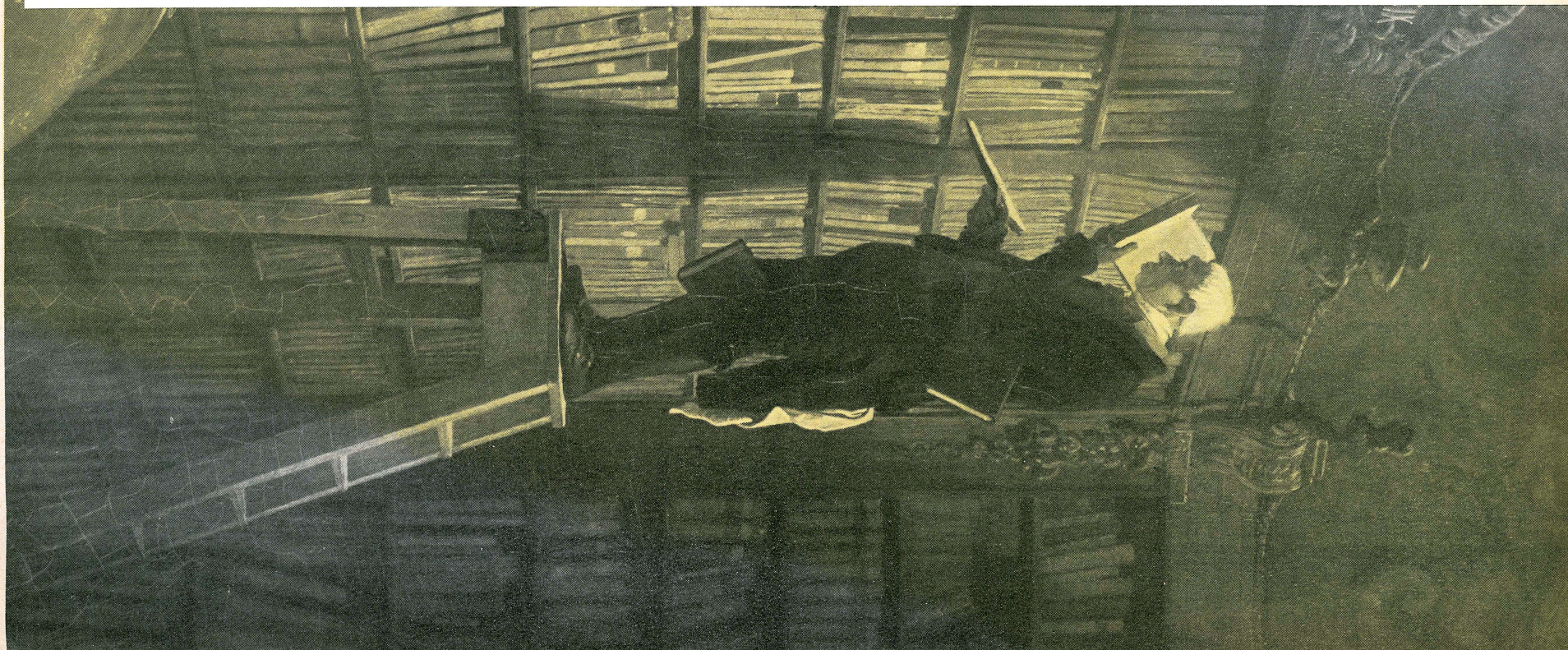

"The Bookworm" by Karl Spitzberg. © Arthur Jaffe Inc., New York, Lichtenstein Gallery, Vienna.

Overview and Tutorial...

Word Proces
For Wr

Each is given a
A shapeless mass an
And each must make
A stumblingblock or

— R. L. Shar

by Tony Bove & Cheryl Rhodes

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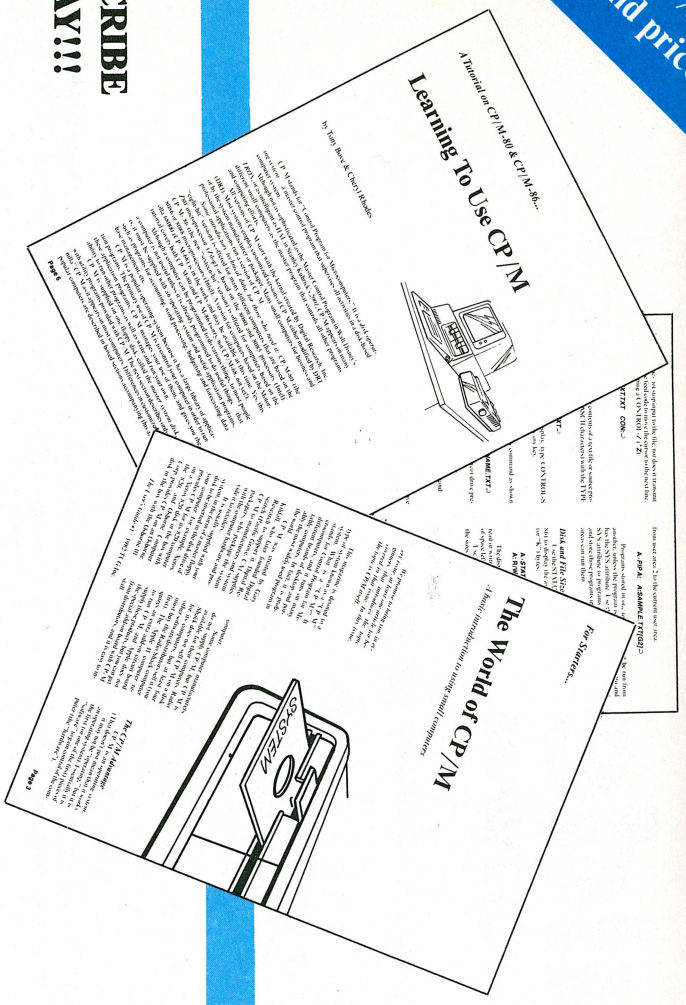

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The programs described in this article try to alleviate the problem of "being in the way." They are modular — designed to be picked up and used only when needed. A writer can be very productive in writing a report, and when it comes time to do an index and format the text with footnotes, the writer can use DocuMate/Plus once, and FOOTNOTE once, to prepare the text.

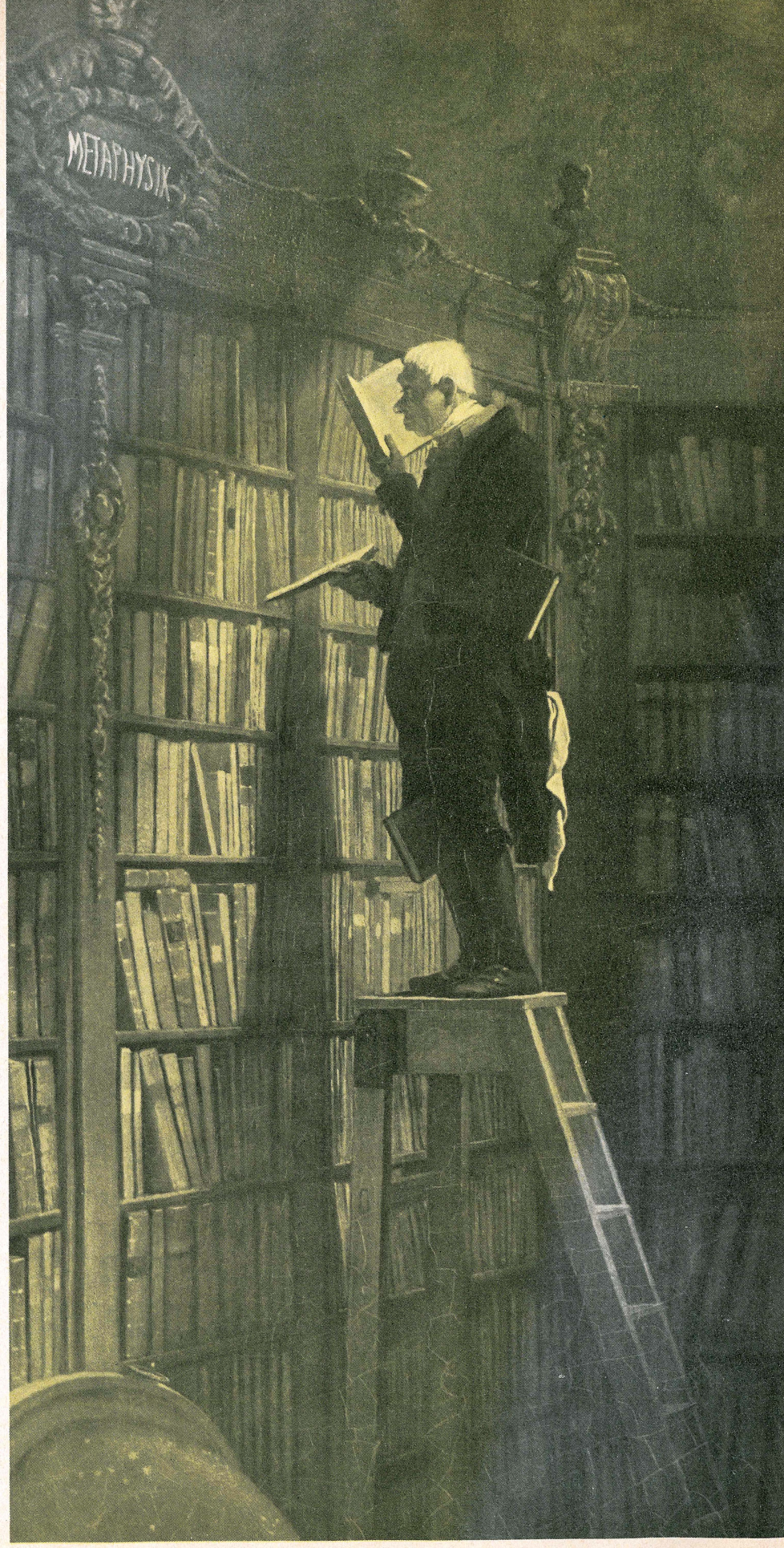
Once used properly, the programs need not be used again; however, they allow the writer the opportunity to make last-minute changes, add or delete text, or move text around. The tools can then be used again to create a new index and to format the text with footnotes.

Some activities require marking the text as you type it, thus making it necessary for the writer to know how to use the tools before typing documents, or to go back and add markings to already typed documents. FOOTNOTE requires that the note call (number in the text, such as "2") and its corresponding footnote be marked in the text in a special way, before using FOOTNOTE. DocuMate/Plus requires a special mark for index words, and another mark for table of contents entries.

These are not drawbacks — how would any program know which words to index, which ideas to footnote? It is remarkable that these programs let you choose to type markings as you type the text, or add them later, and even change them at the last minute, before using the program one last time and printing final documents.

Even the "final document" is not final. With commands in the text file, you can reorganize the text, add or change text, or use portions of the text, and produce a clean, footnoted document with an index, a table of contents, and a bibliography. You can check and correct your spelling with The WORD Plus, and check for missing start/stop underline commands, start/stop boldface commands, open/close parentheses or open/close brackets with PAIR.

We find the FOOTNOTE program useful for producing footnoted documents on our printer. We do not use FOOTNOTE to prepare documents for typesetting, since the printing commands will not work with typesetting equipment. ▷



"The Bookworm" by Karl Spitzberg, © Arthur Jaffe Inc., New York, Lichtenstein Gallery, Vienna.

We find PAIR useful for printed documents, but not for checking typesetting codes. If you ever underline an entire page of text by mistake, you'll appreciate PAIR and use it regularly for printed documents.

We find BIBLIOGRAPHY useful for organizing our references to other works and for inserting the references in our text files for both printing and typesetting. We also use BIBLIOGRAPHY's library sorting program for sorting a small mailing list converted from MailMerge format!

We have used DocuMate/Plus to produce a large two-level index for a book whose chapters were each stored in separate files. The index was in a form that could be printed instantly, or edited to include typesetting codes. We also used DocuMate/Plus to create the table of contents for the book, and to gather together comments and questions within a manuscript.

The WORD Plus is the spelling checker we have chosen over other spelling checkers, including SpellGuard and SpellStar. (SpellGuard was the "checker of choice" until we discovered The WORD Plus, and SpellStar is an option for WordStar.) It is, as far as we know, the only spelling checker that can *correct* your mistakes as well as mark them. It is also the only spelling checker that lets you look up words easily in its dictionary, while checking words in your text file.

Warnings

FOOTNOTE, BIBLIOGRAPHY, and The WORD Plus are very useful programs that are designed to change text in your file. Any program that can change text in your file should be used with caution. *Always make a backup copy of your text file before using such programs!*

The WORD Plus has a nifty self-diagnostic test that can tell if the program has been damaged or changed in any way. If The WORD Plus ever diagnoses itself as sick, do not use that copy — make another copy of your master copy, and use that one.

DocuMate/Plus cannot do much harm to your text file, since it produces separate index and table of contents files. However, if you type a DocuMate/Plus command incorrectly, it will appear on a print-out in the middle of your text.

PAIR is not absolutely harmless, either — it places a marker in your text file to mark where a print control character, such as start underline, is missing a matching character (missing the stop underline character). You should make a backup copy of your file before using PAIR to mark it.

The WORD Plus

The WORD Plus package contains a set of tools that include a spelling checker and *corrector* (TW, SPELL, REVIEW and MARKFIX), a "hyphen-ator" (HYPHEN — program that adds "soft" hyphens to all lengthy words), a text substitution program and homonym helper (MARKFIX by itself), a dictionary "lookup" (LOOKUP), an anagram finder (ANAGRAM), a word counter (WC), a word frequency counter (WORDFREQ), a dictionary sorter (DICTSORT) and a crossword puzzle solver (FIND).

The package is impressive. The TW program is the "orchestra leader" that provides a menu for all spelling checking and correction operations. While reviewing "misspelled" words (words not found in the massive 45,000 word dictionary), you can simultaneously look up the correct spelling in the dictionary, and in one keystroke use the correct spelling to correct all instances of the "misspelling."

This program wins the usefulness contest. We don't know of a single way to improve it except to increase its dictionary, which is already one of the largest available on microcomputers.

The manual is also excellent. It leads you step by step through the TW menu program, and explains how each program can also be used individually.

The TW program starts with several questions about settings. Your answers can be saved so that TW starts automatically with your custom settings. This method of controlling options and settings should be provided in other programs — it is far easier to use than programs that require you to make changes to another file, or programs that always ask the same questions without remembering your answers.

Since The WORD Plus makes changes to your text, and since your text can be formatted using any word processing program's codes, you should choose the option to place a marker at any word whose length changes when corrected. It is a simple task to find the marker and re-form the line to fit your margins.

The WORD Plus checks your text file and compiles a list of words it could not find in its dictionary or in any special supplemental dictionary. You then have several options:

Add word to:	**Other options:**
U⟩pdate Dictionary	**P⟩revious word**
S⟩pec. Dict. "SPECIALS.CMP"	
	N⟩ext word
M⟩ark word	**R⟩esume review**
D⟩iscard word	**L⟩ookup word**
C⟩orrect word	**V⟩iew context**

When you're not sure if the word is correct or incorrect, you can view the context of the word — type ***V*** — and The WORD Plus displays part of the sentence containing the word. You can type ***L*** to look up words that are closest to the "misspelled" word, and if one of the nearby words is correct, type the number or symbol next to that word to use it for the correction.

You can change your mind while reviewing the words — you can move forward in the list with ***N*** (next word) and move backwards in the list with ***P*** (previous word). You can mark the word with the marker you specified (when you started TW), or you can "discard" the word — ignore it for now (it may be a correct word not found in the dictionary).

You can also add words to the dictionary or to the special dictionary. If you chose a special dictionary when you started TW, its name appears rather than **SPECIALS.CMP**; otherwise, special words are collected in the file SPECIALS.CMP and are henceforth used in checking files.

When replacing a incorrect word with a correct one, The WORD Plus automatically converts the capitalization of the correct word to match the incorrect word. The WORD Plus recognizes three kinds of capitalization: all lower case, the

first letter capitalized, or all letters capitalized.

The HYPHEN program puts "soft" hyphens (hyphens that are printed only when needed to justify lines) in every lengthy word in your file, using a technique described by Donald Knuth in his book, *TEX and Metafont, New Directions in Typesetting* (Digital Press, Bedford, MA, 1979). HYPHEN uses an elaborate set of rules that describe how to locate appropriate hyphenation points. In addition (because there are always exceptions), HYPHEN refers to a special dictionary of words that defy these rules named HYEXCEPT.TXT (you can add more words to this file as you find them).

LOOKUP is a program that finds words in the dictionary closest to the spelling of the word you type to "look up." FIND is an all-purpose text search program that finds words in the dictionary matching the word or partial word you type. FIND lets you type an asterisk (*) to match any number of characters, and/or a question mark (?) to match one character.

For example, to find words that rhyme with "probably," you could type:

```
A>FIND *ABLY↵
```

The FIND program would list every word ending in "ably." To find all four-letter words that begin with "s" and end in "t" you would type:

```
A>FIND S??T↵
```

With FIND you should be able to solve any crossword puzzle quickly and easily, and with ANAGRAM you should be able to solve word-scramble puzzles. ANAGRAM will locate any words that are anagrams of the complete word you type.

The WORD Plus has so many features, we cannot do it justice in this short article. If you are looking for the perfect spelling checker, try The WORD Plus. The manual is so easy to use, we feel there is no need for extra documentation.

DocuMate/Plus

To prepare an index and table of contents for a text file, you have to place commands in the text file. You can do this while typing the text, or you can edit the file later and insert the commands where they are needed.

We are in the habit of editing existing files to include the DocuMate/Plus commands, for two reasons:

(1) When we received DocuMate/Plus, we had already typed chapters of a book that needed to be indexed.

(2) We had already placed *typesetting codes* in our text (in preparation for typesetting the book).

Our chapters contained important words defined for the first time (to be put in italics), and keywords to be typed by the reader (to be put in a special typeface). These words were already marked with appropriate typesetting codes, and we also wanted to mark them as index entries.

We also had chapter headings (first level "heads"), subheadings (second level "heads") and smaller headings (third level "heads" and figure captions). We wanted to use these sections of text (already marked with typesetting codes) for the table of contents.

Using WordStar's ↑***QF*** command (find text), we searched for the typesetting codes and added the DocuMate/Plus commands. Since the DocuMate/Plus commands are versions of the WordStar "dot" comment lines, they do not print, and they can be easily changed into "dummy" typesetting comments that will not be typeset.

Inserting Index Commands

Here is a DocuMate/Plus command for a typical index entry:

```
...X file,text↵                    <
```

The entry ***file*** is indexed with the descriptor ***text***. DocuMate/Plus expects a comma to separate the word from its descriptor. (To place a comma within the main entry, use quotation marks around the entire entry.)

Entries and descriptors can be several words. The first example below places the entire entry **text file** in the index. The second places the entry **file, tabbing in** in the index:

```
...X text file↵                    <
...X file, tabbing in↵             <
```

The triple periods ("dots" in WordStar jargon) mark the comment line as a DocuMate/Plus command. The periods start in column 1 of your screen. WordStar interprets the period in column one as one of its "dot" commands for controlling printing, or as a MailMerge command. Two periods (columns one and two) mark a WordStar or MailMerge comment line that is not printed with the rest of the text (it is not counted as a line on the WordStar screen, though it is displayed).

DocuMate/Plus uses three periods to mark DocuMate/Plus command lines since WordStar and MailMerge ignore them. This is one of the cleanest methods for introducing new commands to a WordStar text file. The ***...X*** lines can be found easily with ↑***QF*** (find) or ↑***QA*** (find and replace) commands or commands from any text editing program, and deleted from files that are ready for typesetting. For printed documents, the commands can remain and they will not disturb or show up in the printing.

DocuMate/Plus produces a WordStar file containing an alphabetical index. Each entry includes the page number of every other marked reference to the word. Here are a few entries for **file**:

```
file, data 12, 22                  <
  source, 23, 34                   <
  system, 13, 22, 33               <
  tabbing in, 23                   <
  text, 14, 23                     <
  verify copy in, 15               <
```

Page numbers are determined by WordStar's page settings. If you use ordinary page numbers, they will be used in

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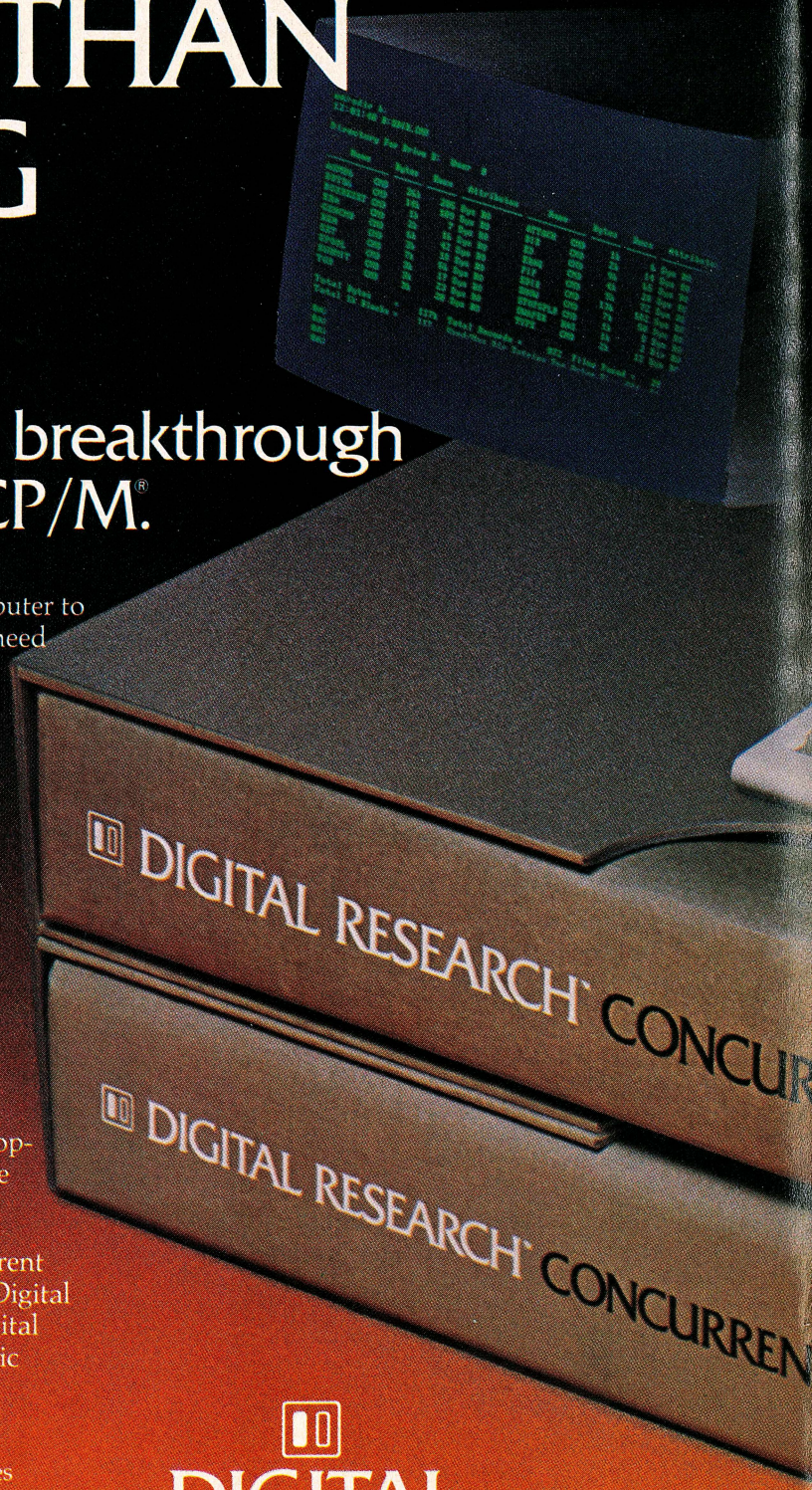

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Shipped with Editor, Assembler and Debugger	●	●			
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Winchester Disk Support	●	●		●	●
CP/M File Compatible	●	●			

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creating the index. If you use ***.PN*** commands to change the page number, these changes are noted by DocuMate/Plus also and are used in the index.

Alternatively, DocuMate/Plus picks up the page number from your ***.HE*** (heading) or ***.FO*** (footing) command. This is useful if you are numbering chapter pages as ***2-4***, ***3-6***, etc. in a heading or footing. DocuMate/Plus finds the prefix by scanning each ***.HE*** or ***.FO*** command for the ***#*** symbol used to mark the place of the page number in a heading or footing. Here's an example:

```
.FO                    Pref-#↩                    ⟨
```

DocuMate/Plus uses the ***Pref-*** prefix and the page number in the index, just as the ***.FO*** command uses the page number substituted for ***#***. DocuMate/Plus assumes you are using the ***#*** symbol *at the end* of the heading or footing, and picks up the characters preceding the ***#*** symbol, until it finds a space or comma.

DocuMate/Plus also provides the ***...R*** and ***...A*** commands for references to other index entries. Here are ***...R*** and ***...A*** commands:

```
...R recursion, self-reference↩                ⟨
...A point-of-reference, self-reference↩       ⟨
```

These commands produce the following entries in the index:

```
recursion, see self-reference                  ⟨
point-of-reference, see also self-reference    ⟨
```

You can change your text file, add more DocuMate/Plus commands to the text file, and change page numbers at any time. Run DocuMate/Plus on the file after making changes, and the program produces a new sorted index. You can also edit the index, since it is a WordStar text file.

Most large documents occupy several separate files. You can use DocuMate/Plus commands in these separate files, and assemble one index and table of contents from them. Number your pages as you want them to appear; for example, if you want consecutive page numbers throughout the entire document, you must use a ***.PN*** command at the beginning of each separate file to control the page numbering.

Table of Contents

DocuMate/Plus table of contents commands let you define any number of levels of chapter/section headings:

```
...T1 Chapter 2: Using DocuMate↩               ⟨
...T2 Introduction↩                            ⟨
...T3 Introducing Index Commands↩              ⟨
...T4 Figure 2-1. Summary of index commands.↩  ⟨
```

Use these commands in the text at the location of the headings. DocuMate/Plus will use the page number defined by WordStar (just as with an index).

If you are using prefixed page numbers (such as ***2-5*** or ***Pref-4***), you must also define the prefix width in the text file:

```
...PREFIXWIDTH 4↩                              ⟨
```

We use the largest value for the prefix width — four (4) for "Pref" used in the preface. The page number width, by default, is three (3) digits to accomodate page numbers in the hundreds.

A table of contents is created as a WordStar text file, with page numbers by default at the left margin, and headings following the numbers on the same line (separated by two spaces):

```
2-1    Chapter 2: Using DocuMate                ⟨
2-2      Introduction                           ⟨
2-3        Introducing Index Commands           ⟨
2-4          Figure 2-1. Summary of index commands.  ⟨
```

You can edit the table of contents file to be in any form, or you can use DocuMate/Plus commands to format the table of contents before producing it:

```
...COLUMNWIDTH 40↩                             ⟨
...PNWIDTH 8↩                                  ⟨
...MARGINWIDTH 0↩                              ⟨
...TOCINDENT 4↩                                ⟨
```

The ***...COLUMNWIDTH*** command controls the width of the table of contents by placing the headings at the left margin and justifying the page numbers to the right margin:

```
Chapter 2: Using DocuMate ..................... 2-1   ⟨
  Introduction ............................... 2-2   ⟨
    Introducing Index Commands ............... 2-3   ⟨
```

A column width of zero (0) sets up a table of contents with the page numbers at the left margin and the headings to the right of them on the same line (as shown above).

The ***...PNWIDTH*** command specifies a column for the page number itself (not the prefix). Its default value is three (3) digits.

The ***...MARGINWIDTH*** command specifies the number of spaces between the numbers and the headings for the default column width (page numbers at the left margin). If you set the page numbers at the right margin, the ***...MARGINWIDTH*** command specifies the space between the headings and the page number prefix.

Set ***...MARGINWIDTH*** to zero (0) if the page numbers are at the right margin. The default is two (2), which works nicely with a default column width and page number width.

...TOCINDENT lets you specify the number of spaces to indent sub-level headings. The default is three (3).

Running DocuMate/Plus

To generate an index and table of contents for one file, run DocuMate/Plus, type ***T*** for text file and type the name of the text file (***SAMPLE.TXT***), type the name of the table of contents file (***SAMPLE.TOC*** if you wish), and type ***X*** for an index

file, plus the name of the index file (***SAMPLE.NDX***).

DocuMate/Plus builds an index entirely in RAM if the index is small enough. Otherwise, DocuMate/Plus uses disk space for sections of the index. A rule of thumb is to have at least enough disk space to fit twice the expected size of the index.

To generate an index and table of contents from several files, run DocuMate/Plus on each file, and specify an *intermediate* file by typing ***I*** (rather than ***X*** for an index). Use the ".INT" extension for the intermediate file (***CHAP1.INT***, ***CHAP2.INT***, etc.).

You then create a *control file* of DocuMate/Plus commands as shown:

```
...FILE CHAP1.INT↵
...FILE CHAP2.INT↵
...FILE CHAP3.INT↵
...FILE CHAP4.INT↵
```

Now run DocuMate/Plus on the control file: type ***C*** rather than ***T*** to select a control file as input to the program. DocuMate/Plus generates one index and table of contents from the intermediate files.

If the page numbers in the separate sections have chapter number prefixes, the index and table of contents will use them. If the pages are numbered consecutively throughout the book, DocuMate/Plus uses consecutive page numbers.

What if you want to produce one index of several different documents? DocuMate/Plus lets you specify a page number prefix in a control file for each intermediate file. The following example shows the prefixes **I**, **II**, **III** and **IV** created for four different volumes:

```
...DOC I-↵
...FILE VOL1.INT↵
...DOC II-↵
...FILE VOL2.INT↵
...DOC III-↵
...FILE VOL3.INT↵
...DOC IV-↵
...FILE VOL4.INT↵
```

...DOC is short for the ***...DOCUMENTNAME*** command. You can specify a longer document name to identify each volume in the index and table of contents.

FOOTNOTE

The FOOTNOTE program from PRO/TEM prepares WordStar files with control commands to print footnotes in the right places. You can type your footnotes in the same file as the text with the footnote calls, or you can type them into a separate file.

You can also merge footnotes in a separate file with the corresponding text file, or remove footnotes from a text file to a separate file. Clearly, you have control over the placement of footnotes so that they do not disrupt the flow of your text.

You use the **@** symbol to mark a footnote call (you don't use numbers — FOOTNOTE supplies the numbers later). You can use any other symbol by changing the OPTIONS.FN file supplied with FOOTNOTE (OPTION.FN is a WordStar text file shown later).

For example:

> ***"Goin' Up the Country" by Alan Wilson@ was a favorite of Canned Heat, and it was also nicely performed by Duane Allman.@ Taj Mahal wrote another song with a similar title — "Goin' Up the Country, Gonna Paint My Mailbox Blue."@↵***

We marked three footnote calls: one following ***Wilson***, one following ***Allman.***, and one following ***Blue.".***

Later in this file, we can type the three footnotes in the order they are called:

```
↑PR↵
↵
@ Alan Wilson, "Goin' Up the Country," Metric Music
Co. (BMI), ↑PSCanned Heat Cookbook↑PS, Liberty Re-
cords. ↵

@ Duane Allman, ↑PSAnthology↑PS Vol. II, Capricorn
Records. ↵

@ Taj Mahal, "Goin' Up the Country, Gonna Paint My
Mailbox Blue," BMI, ↑PSThe Natch'l Blues↑PS, Colum-
bia Records. ↵
.PA↵
```

Each footnote begins with the **@** symbol, to be changed to a number later by FOOTNOTE. (The footnotes also contain ***↑PS*** commands, which are displayed as **↑S**, to underline the record titles.)

You must type the footnotes in the same order as the footnote calls. If the order of any call changes as a result of block moves or editing, you must also move the order of its associated footnote.

Footnotes in a text file, called *endnotes* in FOOTNOTE jargon, can appear anywhere as long as each section of footnotes are bounded by ***↑PR*** and ***.PA*** commands. The WordStar ***↑PR*** command, which displays a **↑R** in your file, is a non-reserved printing control character used by FOOTNOTE to mark the rule line starting the footnotes. The ***.PA*** command forces a page break, but is used by FOOTNOTE to also mark the end of a section of footnotes.

NOTE

One drawback of FOOTNOTE is that you can use the ***.PA*** command only to mark the end of footnote sections, and you cannot use ***.CP*** (conditional paging) at all. If you need to use these WordStar commands for other purposes, you must type them as ***..PA*** and ***..CP*** and let FOOTNOTE change them during its formatting operation.

With footnotes and calls in your text file, run FOOTNOTE (type ***FN*** followed by RETURN) and select the option to number the footnotes from this menu:

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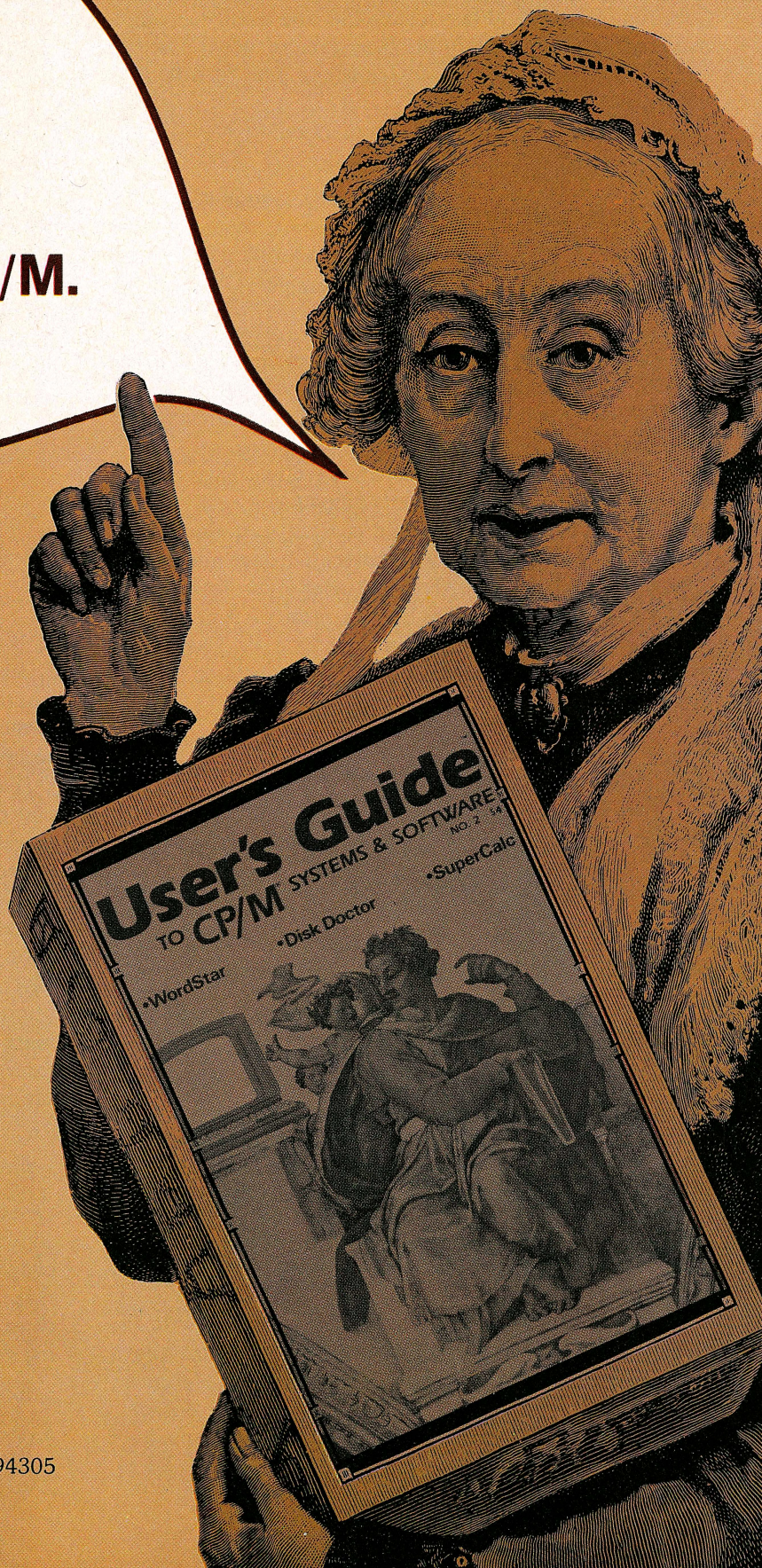

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Do not type ↑Y or ↑A in the separate footnote file — these commands are used only for footnotes typed within the text files calling them. However, be sure to use @ before each

ɔotnote to stand for its number.

You can type footnotes with the text in a text file (using ***PR*** and ***.PA*** commands to separate them from the rest of the xt), and then *remove* them to another file using the remove ɔtion.

You cannot use the same primary name for a separate ɔotnote file (such as SAMPLE.NOT). You must use a dif-ɜrent primary name, such as SAMPLNOT.TXT.

FOOTNOTE lets you cancel filename requests if you type Control-***X***. FOOTNOTE also lets you repeat a filename as ɔu can in WordStar, using Control-***R***.

ɔrmatting the File

When you're ready to format the footnotes in your text le, first make a copy of the file. FOOTNOTE's formatting ·ocess adds lines and changes codes in your text. If you ɔofed or forgot something, or FOOTNOTE is deranged ıough to damage your text, you want to have an untouched ɔpy.

If your footnotes are stored in a separate file, use the num-ɜr option on both the text file and the separate footnote file, ıen use the *merge* option to merge the footnotes back with ıe text file.

After selecting the formatting option, the footnotes are in-grated within your text file in the proper places for printing. our formatted file may look like the following:

```
"Goin' Up the Country" by Alan Wilson↑E↑T1↑T was
a favorite of Canned Heat, and it was also nicely per-
formed by Duane Allman.↑E↑T2↑T Taj Mahal wrote an-
other song with a similar title — "Goin' Up the Country,
Gonna Paint My Mailbox Blue."↑E↑T3↑T                    <
↑Y↑Y                                                    <
  .                                   (blank lines omitted)
  .
↑R_____                                                 <
                                                        <
↑E↑T1↑T  Alan Wilson, "Goin' Up the Country," Metric
Music Co. (BMI), ↑SCanned Heat Cookbook↑S, Liberty
Records.                                                <
                                                        <
↑E↑T2↑T  Duane Allman, ↑SAnthology↑S Vol. II, Capri-
corn Records.                                           <
                                                        <
↑E↑T2↑T  Taj Mahal, "Goin' Up the Country, Gonna
Paint My Mailbox Blue," BMI, ↑SThe Natch'l Blues↑S,
Columbia Records.                                       <
.PA                                                     <
```

The ↑Y↑Y line controls the number of blank lines that will ɜ printed between the text and the footnote sections. This ɜample file is ready to be printed.

Since FOOTNOTE produces an otherwise normal Word-ɜar text file, you can still edit the file after it is formatted. ·e recommend that you remove the footnotes with the re-ove option, edit the file, and be sure the footnotes are ɜhanged to reflect the order they are called (after editing). Then number the file again (to check for errors or dropped notes or calls), and reformat the file.

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Each issue provides a tutorial for beginners as well as "impatient user's guides" on using *systems and programs.* **User's Guide** *provides documentation for the CP/M family of systems, including MP/M, CP/Net, other versions of CP/M and CP/M-compatible software.*

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TYPE	IN ORDER TO
1 or N	Number notes
2 or F	Format footnotes in textfile
3 or R	Remove notes from textfile to endnote file
2 or F	Merge endnotes into textfile
2 or F	Exit to operating system

Numbering Notes

Always number the notes before formatting the text with FOOTNOTE. The numbering process identifies errors. It numbers all calls consecutively, and numbers all notes consecutively, substituting numbers for the @ symbols. If the file contains calls or notes only, they are numbered consecutively.

If there are more footnote calls than footnotes in a file, or more footnotes than calls, the number routine displays the approximate location of the discrepancy.

You have several note-numbering options. The default setting is a superscripted number for both the call and the footnote. You can change this to a superscripted, underscored number with a slash (e.g., 2/), by changing the OPTIONS.FN file shown later. You can also change the numbering scheme to the "standard" *Chicago Manual of Style*, which is a number followed by a period. If you have a file with calls but with *no footnotes* (no ↑***PR*** or ***.PA*** commands), you can select the Chicago style "on the fly." When FOOTNOTE asks for a starting number, type ***E*** to change temporarily to the Chicago "standard," and FOOTNOTE will ask again for the starting number. Using this method, you can number any set of items, with the number substituted for the @ symbols. The starting number is used for both the calls and the footnotes in the text. Press RETURN if the number is one (1); otherwise, type the starting number and press RETURN. During the numbering of the file, all @ symbols are replaced by a group of characters. By default, these are **↑E↑T1↑T**, **↑E↑T2↑T**, **↑E↑T3↑T**, etc. The **↑E** is a marker for FOOTNOTE, and the **↑T** pair turn on and off superscript mode to print the number.

Separate Footnote File

A footnote section incorporated in your text file occupies space, and the it seems the pages will not be printed correctly. Actually, they won't be printed correctly (!) unless you use FOOTNOTE to number the notes and format the text for printing.

If you intend to edit the file extensively, you should keep footnotes in a separate file. For example, if you moved a section of text that included footnotes to another location in the document, they may not correspond to the right calls.

When you type footnotes into a separate file, type them in order as they are called, and change their order if the order of the calls change after editing.

NOTE

Do *not* type ↑***PR*** or ***.PA*** in the separate footnote file — these commands are used only for footnotes typed within the text files calling them. However, be sure to use @ before each footnote to stand for its number.

You can type footnotes with the text in a text file (using ↑***PR*** and ***.PA*** commands to separate them from the rest of the text), and then *remove* them to another file using the remove option.

You cannot use the same primary name for a separate footnote file (such as SAMPLE.NOT). You must use a different primary name, such as SAMPLNOT.TXT.

FOOTNOTE lets you cancel filename requests if you type a Control-***X***. FOOTNOTE also lets you repeat a filename as you can in WordStar, using Control-***R***.

Formatting the File

When you're ready to format the footnotes in your text file, first make a copy of the file. FOOTNOTE's formatting process adds lines and changes codes in your text. If you goofed or forgot something, or FOOTNOTE is deranged enough to damage your text, you want to have an untouched copy.

If your footnotes are stored in a separate file, use the number option on both the text file and the separate footnote file, then use the *merge* option to merge the footnotes back with the text file.

After selecting the formatting option, the footnotes are integrated within your text file in the proper places for printing. Your formatted file may look like the following:

```
"Goin' Up the Country" by Alan Wilson↑E↑T1↑T was
a favorite of Canned Heat, and it was also nicely per-
formed by Duane Allman.↑E↑T2↑T Taj Mahal wrote an-
other song with a similar title — "Goin' Up the Country,
Gonna Paint My Mailbox Blue."↑E↑T3↑T                    <
↑Y↑Y                                                    <
 .                                   (blank lines omitted)
 .
↑R_________                                             <
                                                        <
↑E↑T1↑T  Alan Wilson, "Goin' Up the Country," Metric
Music Co. (BMI), ↑SCanned Heat Cookbook↑S, Liberty
Records.                                                <
                                                        <
↑E↑T2↑T  Duane Allman, ↑SAnthology↑S Vol. II, Capri-
corn Records.                                           <
                                                        <
↑E↑T2↑T  Taj Mahal, "Goin' Up the Country, Gonna
Paint My Mailbox Blue," BMI, ↑SThe Natch'l Blues↑S,
Columbia Records.                                       <
.PA                                                     <
```

The **↑Y↑Y** line controls the number of blank lines that will be printed between the text and the footnote sections. This example file is ready to be printed.

Since FOOTNOTE produces an otherwise normal WordStar text file, you can still edit the file after it is formatted. We recommend that you remove the footnotes with the remove option, edit the file, and be sure the footnotes are changed to reflect the order they are called (after editing). Then number the file again (to check for errors or dropped notes or calls), and reformat the file.

NOTE

Never add text to a formatted file on the lines between the **↑Y↑Y** line and the **↑R** line above the footnotes. When you re-format a file, FOOTNOTE treats the lines as "blank" lines and deletes them to fit new page boundaries.

Add text to an already-formatted file before the **↑Y↑Y** line, or delete the **↑Y↑Y** line and all subsequent lines up to the **↑R** (don't delete the **↑R** line), then re-format the file.

If a "disk full" error occurs, FOOTNOTE may remove footnotes automatically to a file named PRO.TERM. If such a file exists after this error, use the *number* option to renumber both your text file and PRO.TEM to be sure that the calls match the notes. After erasing unneeded files to make more room on the disk, merge the two files and reformat the text file. The next time you use FOOTNOTE, it will ask if you want to delete the PRO.TEM file.

Options

FOOTNOTE provides an OPTIONS.FN file that is a WordStar text file with characters in special places:

```
CALL: @                    <
FNUMOPT: 1                 <
FNSTYLE: 1                 <
RULE(Control): R           <
REPCALL(Control): E        <
EOTEXT(Control): Y         <
NOFOOTPAGE: 55             <
FOOTPAGE: 55               <
SPLITNOTES(Y/N): Y         <
START: S                   <
LIMIT: 200                 <
MARKER:                    <
```

You may change only the character, letter, or number following any of the headings. You must not change the headings or the order shown above. Make sure that no blank lines precede the **CALL:** line.

CALL: is the character, used for each call in the text and at the beginning of each footnote, that is replaced with a number.

FNUMOPT: can be one of the following options:

1 Superscripted.
2 Superscripted and underlined, ending with a slash.
3 Underlined but not superscripted, ending in a slash.

FNSTYLE: can be one of the following options:

1 Footnote number printed in identical format to note call.
2 Footnote number printed in "standard" style.

RULE: is the Control key character used to mark the beginning of a group of footnotes. Default is **R** for the ***↑PR*** command (displayed as **↑R**). To change the Control-key character, replace the **R** with a different capital letter that is not reserved by WordStar as a ***↑P*** special effect (see ***↑P*** menu in WordStar for a display of the special effects). Do *not* press the Control key.

REPCALL: is the Control key character that the number routine automatically substitutes for the **CALL:** symbol. To change, replace the default **E** with a different capital letter that is not reserved by WordStar as a ***↑P*** special effect. Do *not* press the Control key.

EOTEXT: is the pair of identical Control key characters that FOOTNOTE inserts when it adds "soft" lines for proper formatting. To change, replace the default **Y** (for the **↑Y↑Y** line) with a different capital letter not reserved by WordStar. Do *not* press the control key.)

NOFOOTPAGE: is the number of lines of text on a page that has no footnotes. The number should correspond to the number of lines of text (excluding top and bottom margins) on your WordStar page.

FOOTPAGE: is the number of lines of text on a page that has footnotes. The number must not be greater than **NOFOOTPAGE:**.

FOOTNOTE uses the WordStar default value of 55 lines per page. FOOTNOTE pays no attention to your changes to the paper length (WordStar ***.PL*** command) or top and bottom margins (***.MT*** and ***.MB*** commands), unless you also change **NOFOOTPAGE:** and **FOOTPAGE:**.

FOOTPAGE: and **NOFOOTPAGE:** should be the same. **FOOTPAGE:** is provided to make a page with footnotes shorter than pages without footnotes (to provide some room for editing in double-spaced files).

FOOTNOTE always places a footnote on the same page as its call. If the footnote is too long to fit on the page, FOOTNOTE continues the note on the next page in the footnote section (at the bottom).

You can change this by changing the **SPLITNOTES:** setting to ***N***, which forces the entire footnote *and* the line that calls it to the following page. The default setting (***Y***) continues long footnotes to the following page. FOOTNOTE always displays a warning message during formatting if it finds long footnotes.

The last three settings are used by the PAIR program, described next.

The PAIR Checker

The PAIR program comes on the FOOTNOTE distribution disk from PRO/TEM. If you typically underline an entire page by mistake, you should get this program.

PAIR checks for matching pairs of WordStar ***↑PS*** commands (displayed in your text as **↑S**). The first ***↑PS*** command in each pair turns underlining on, and the second turns it off. If the first or the second of the pair is missing, the underlining continues until WordStar encounters another ***↑PS*** command or the end of the file (or a request from you to stop the printing).

Type ***PAIR*** followed by the name of your file, and press RETURN. PAIR checks to see that each ***↑PS*** command (**↑S** character) is matched by another one with less than 200 characters between them. PAIR displays each line containing a **↑S** character.

If 200 or more characters follow a **↑S** character, PAIR displays an error message and marks the place in the text at the 200th character. The marker is a right curly bracket (}).

If your text has several underlined phrases close together, and one of the ↑**S** characters is missing, PAIR might not detect the error until after the last phrase of the group, because the close proximity of ↑**S** characters keeps PAIR from detecting the error.

PAIR comes supplied to check for matching underline (↑**S**) characters. If you want to check for another Control character, such as ↑**B** (boldface) or ↑**D** (double-strike), you can type the letter of the Control character on the command line with PAIR. For example, this PAIR command checks SAMPLE.TXT for any ↑**B** characters:

A〉***PAIR SAMPLE.TXT B***↩

PAIR can check for closing parentheses or brackets rather than ↑**S** characters. To change the pair "on the fly" to parentheses or brackets, type an opening parenthesis (***(***), square bracket (***[***) or curly bracket (***{***) in place of the ***B*** in the example above. Note, however, that if you are checking for a curly bracket, PAIR will leave a closing curly bracket as a marker of any errors. You should change the marker to another character before searching for curly bracket pairs.

The OPTIONS.FN file, used also with FOOTNOTE, lets you change the three PAIR settings. You can change the PAIR marker, or the PAIR character searched for, or the number of characters to count between the pair of characters.

START: is the character to be matched. The default is ↑**S** (Control-***PS***). To change to any other Control character, replace the **S** with a different capital letter. Do *not* press the Control key. To change the character pair to parentheses, replace the **S** with ***(***; to change it to brackets, type the appropriate opening bracket.

NOTE

If you type a closing bracket rather than an opening bracket, PAIR will check for pairs of closing brackets rather than check for pairs of opening/closing brackets. You can type any symbol; e.g., you can type the # symbol, and PAIR will check for pairs of # symbols.

LIMIT: is the number of characters counted between the characters to be matched before PAIR detects an error. The default value is 200.

MARKER: is the character that PAIR inserts in a text file to mark the error. The default is a closed curly bracket (}).

We found PAIR useful for checking our typesetting codes as well as WordStar print code pairs. Our typesetting codes, in their final form, are enclosed in curly brackets (e.g., {**ql**} is the code for the quad left command). We changed our OPTIONS.FN file to check for opening/closing curly brackets, and we changed the error marker to the # symbol.

When we change the OPTIONS.FN file, we copy the original version to the file OPT.FN to preserve it. Whenever we create new versions of OPTIONS.FN, after using them we rename them (e.g., OPT(.FN for parentheses, OPT{.FN for curly brackets, OPT[.FN for brackets, etc.). When we're ready to use a version, we rename it to OPTIONS.FN and use it with PAIR.

PAIR is useful for many checking operations, but it is not the perfect pair checker (we haven't yet found the perfect pair checker). PAIR will not let us check for matching codes longer than one character; therefore, we cannot automatically check all our typesetting codes. It *is* useful for checking every kind of WordStar print effect that is controlled by a pair of characters.

BIBLIOGRAPHY

The BIBLIOGRAPHY package contains a program to create bibliographies, a program to merge bibliographies and a program to sort a library of bibliographic references.

BIBLIOGRAPHY is compatible with WordStar, Spellbinder, PeachText (Magic Wand), Select, EasyWriter-II, Final Word, and most other text editors and word processing programs.

To experienced users, the programs are flexible tools for merging information from a data base with text files. We used the SORTLIB.COM program to sort a mailing list ("printed" to a disk file by MailMerge, in the BIBLIOGRAPHY format). The BIB (BIB.COM) program can merge an entire reference into a document before printing the document.

Beginners should approach BIBLIOGRAPHY with the intended application in mind. The intended application is to maintain a library of references and to produce a bibliography from this library, using the following files:

- One or more text files with calls to references in the text.
- One or more library files holding all cited references for all text files, maintained in alphabetical order.
- One bibliography file created for one or more text files. The application is not rigidly defined, but the rules for using BIBLIOGRAPHY are. You can create library files before using BIBLIOGRAPHY, or you can type the entries as you need them. Either way, you must decide what to use for a *key phrase*. The key phrase is used to find the reference. Most users list the author's name and book or magazine title as the key phrase; others use the author's name and the year of publication. The key phrase must be able to identify a specific reference. When BIB produces a bibliography file of references, BIB can also alter the key phrases in the text. Key phrases can be left as they are, or replaced by the reference, or replaced by a number. Key phrases are typed into the text as shown:

As early as the Beatles' ↑PSRubber Soul↑PS, John Lennon and Paul McCartney were writing songs individually (see %Davies, Authorized: p. 286). Listeners can tell which one wrote which song because the writer is also the lead vocalist. In fact, "A Day In the Life" may have been the last real collaboration on one song by the two outstanding artists. You can tell who wrote which verse by who sings it (see %Norman, SHOUT: p. 290).↩ 〈

The two key phrases in the above paragraph are ***%Davies, Authorized*** and ***%Norman, SHOUT*** (the colons following them are not part of the keys — they are in the text for a reason described later). Key phrases can be up to 20 characters.

The keys point to references in a a *library* file. You must create a library file before running BIB. A library consists of a text file with headings as shown:

```
%Key:      ⟨
%Author:   ⟨
%Title:    ⟨
%Pub:      ⟨
%Annot:    ⟨
%:         ⟨
```

These headings tell BIB how to put together a reference. The **%Key:** heading tells BIB which reference to use, and its phrase must match the key phrase you typed into your text. The final **%:** heading marks the end of each reference.

The sorting program (SORTLIB.COM) sorts libraries in alphabetical order, using the **Key:** phrase, and also requires the final **%:** heading mark the end of a record.

You should type these headings into a file you can use as a template for entering references into a library. You can then use the WordStar ↑***KR*** command to read the template file, and fill in the reference data next to each heading.

The references that satisfy the key phrases in the previous example are:

```
%Key:Davies, Authorized↩                                  ⟨
%Author:Hunter Davies↩                                    ⟨
%Title: The Beatles: The Authorized Biography↩            ⟨
%Pub: London: Granada Pub. Limited, 1981↩                 ⟨
%Annot: Purged of inflammatory remarks, etc.↩             ⟨
%:                                                        ⟨
%Key: Norman, SHOUT↩                                      ⟨
%Author: Philip Norman↩                                   ⟨
%Title: SHOUT! The Beatles in Their Generation↩           ⟨
%Pub: New York: Simon and Schuster, 1981↩                 ⟨
%Annot: Excellent, uncensored and good commen-
tary. ↩                                                   ⟨
%:                                                        ⟨
```

With key phrases and corresponding references in a library file, use BIB to produce a bibliography file containing the specific references you need. This bibliography can have references listed in the order they are referenced, or alphabetically by key phrase (if you want an alphabetical bibliography, use the author's last name as the first word of the key phrase). The bibliography references can include the key phrase if you wish, but usually the key phrase is not included.

Before running BIB, check the OPTIONS.BIB file (a text file) for the various options. Since BIB is controlled by these settings, you will probably want to change them (or at least check them) every time you run BIB for a different application.

Here is the contents of OPTIONS.BIB:

```
%Text: 0                ⟨
%Bib: 1                 ⟨
%BibOrder: 2            ⟨
%BibKey: 2              ⟨
%BibNum: 1              ⟨
%BibAuthCase: 1         ⟨
%Annot:2                ⟨
%Editor: 1              ⟨
```

%Text: must be one of four numbers:

0 Do not modify text.
1 Remove **%** from the key phrase.
2 Replace the key phrase with a number corresponding to a reference in the bibliography (see also **BibNum:**).
3 Replace the key phrase with a concatenated reference (for use especially in footnotes).

For documents that have key phrases in footnotes (especially footnotes numbered by FOOTNOTE), set option three (3) to replace the key phrase with the concatenated text of the reference (with or without the annotation marked by **%Annot:** in the library). Since FOOTNOTE numbers footnotes properly, you would also set **%BibOrder** below to be in the order of reference (1).

You can choose to replace the key phrase with a number indicating the order of the reference in the bibliography, which is alphabetized.

You can choose to remove the **%** symbols, but you should not do this until your editing is completely finished and the document is ready for final printing.

The **%Bib:** options are:

0 Do not construct bibliography file.
1 Put references in the bibliography with author, title, etc., as in the library.
2 Put references in the bibliography with all text concatenated.

Choose one (1) if you are replacing the key phrases with entire references, which is typical of footnote applications. When BIB asks for the text filename, library filename, and bibliography filename, you can press RETURN for the bibliography filename and not create a separate bibliography.

Otherwise, choose either to create a bibliography that looks like a standard printed bibliography (concatenated text), or choose the default, which is a bibliography that looks like the library entries.

For **%BibOrder:** you have the following choice:

1 Bibliography with entries in order of reference (order in which they are called in the text).
2 Bibliography with entries in alphabetical order.

For **%BibKey:** you have the following choice:

1 Keep the key phrase in the bibliography.
2 Remove the key phrase from the bibliography. This is the default setting (typically, the key phrase is redundant if you print it along with the entire reference).

For **%BibNum:** you have the following choice:

1 Do not number bibliography entries.
2 Number bibliography entries sequentially. This is the default setting.

For **%BibAuthCase:** you have the following choice:

1 Author's name in same case as the master library (default setting).
2 Author's last name in all UPPER case.

For **%Annot:** you have the following choice:

1 Do not include the **%Annot:** line (annotation) from the library in the bibliography.
2 Include the **%Annot:** line (default setting).

For **%Editor:** you have the following types of word processing and text editing programs:

1 WordStar and others that use the Carriage Return — Line Feed combination to end lines.
2 Spellbinder and others that use Carriage Return only to end lines.

Here's an example of a citation in a footnote:

As early as the Beatles' ↑PSRubber Soul↑PS, John Lennon and Paul McCartney were writing songs individually.@ Listeners can tell which one wrote which song because the writer is also the lead vocalist. In fact, "A Day In the Life" may have been the last real collaboration on one song by the two outstanding artists. You can tell who wrote which verse by who sings it.@ ↩ ⟨
↑PR ↩ ⟨
↩ ⟨
@ See %Davies, Authorized: p. 286.↩ ⟨
↩ ⟨
@ See %Norman, SHOUT: p. 290.↩ ⟨
↩ ⟨
.PA↩ ⟨

We use the following settings in OPTIONS.BIB:

%Text: *3*↩ ⟨
%Bib: *0*↩ ⟨
%BibOrder: *1*↩ ⟨
%BibKey: *2*↩ ⟨
%BibNum: *1*↩ ⟨
%BibAuthCase: *1*↩ ⟨
%Annot:*1*↩ ⟨
%Editor: *1*↩ ⟨

To summarize our choices for these settings: **%Text:** is set to replace the citation with the entire concatenated reference, **%Bib:** is set to no bibliography, **%BibOrder:** is set to order of reference, **%BibKey:** is set to exclude the key phrase, **%BibNum:** is set to no numbers (use FOOTNOTE to renumber the **@** symbols in this example), **%BibAuthorCase:** is set to the default case, **%Annot:** is set to exclude the annotation, and the **%Editor:** is WordStar (or like WordStar).

After BIB substitutes the references for the key phrases, use the WordStar ***↑B*** command to re-form them to fit the margins of your text. After re-forming, the footnotes in the above example look like this:

@ See Hunter Davies, The Beatles: The Authorized Biography, London: Granada Pub. Limited, 1981. p. 286. ⟨
⟨
@ See Philip Norman, SHOUT! The Beatles in Their Generation, New York: Simon and Schuster, 1981. p. 290. ⟨

Use FOOTNOTE to renumber the **@** symbols and format the text for footnotes, and the document is ready to print.

If you want to leave the key phrase as is, you can strip the **%** symbol from the phrases to make them appear as normal text, but you should do this only after your document is finished and its bibliography or footnotes are ready for printing.

If BIB cannot find a reference corresponding to a call in the text, BIB creates the file CANTFIND.BIB containing names of all citations it found in the text for which there was no matching key in the library.

NOTE

To include some references in your printed bibliography for which there are no direct in-text citations, type fake citations in the text as comment lines that do not print (lines beginning with two periods).

The BIBLIOGRAPHY package includes the MERGEBIB program, which can merge up to three bibliographies or complete libraries at once into one file, sorted alphabetically by key phrase. Note, however, that the bibliographies must already be in alphabetical order.

For example, you can create one bibliography for several files by creating a separate bibliography for each file, with **%BibOrder:** set to two (2) to alphabetize them, and merge the bibliographies. Although you can only merge three bibliographies in a single run, you can merge any number of files by merging them three at a time, and then merging the results.

BIBLIOGRAPHY also contains a SORTLIB program that can sort a library or bibliography of 140 records in about one minute. The program sorts records into alphabetical order by key phrase. BIBLIOGRAPHY also has a LISTKEYS program to print the key phrases — use with your printer on and ready!

The programs described in this article should be available from your local CP/M software dealer. If they are not, you can order them from the source:
FOOTNOTE, BIBLIOGRAPHY and PAIR are from PRO/TEM Software and are distributed by Digital Marketing, 2670 Cherry Lane, Walnut Creek, CA 94596; phone no. (415) 938-2880.
DocuMate/Plus is from The Orthocode Corp., P.O. Box 6191, Albany, CA 94706; phone no. (415) 832-8175.
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Your Terminal and Your Health

by J. Ruth Gendler

This article was first published as the preface to the OMNIWRITER Teaching Manual, *Version C 1.2Q, Omni Systems International (2229H McGee Ave., Berkeley CA 94703), May 1, 1982. OMNIWRITER is a word processing program from Omni Systems International. We use OMNIWRITER to process text files with typesetting codes, and are planning a review in a future issue. The manual, from which this preface was extracted, is excellent.*

We include here the usual disclaimer that the opinions expressed are those of the author, not the editors. We invite comments from our readers.

When you use OMNIWRITER, you are most likely using a VDT (Video Display Terminal), often referred to as a CRT for its Cathode Ray Tube screen. You have entered into an electronic world that can bring increased efficiency and new challenges. However, along with these benefits, many VDT users have experienced a series of health problems.

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In this preface we consider the most noticeable health hazards, and whenever possible we discuss ways to minimize them. Stresses include eye problems, back strain and other posture related problems, and the least understood and potentially dangerous area: long term exposure to microwave and x-ray radiation.

Your Eyes

Symptoms of visual discomfort include tired, watery eyes, blurred vision, dizziness, problems with eyeglasses and contact lenses, and burning headaches. It's advisable for anyone about to begin working with a VDT to have their eyes checked initially. Everyone working with VDTs should have their eyes examined at regular intervals.

"Because everyone gets sore eyes sometimes, people often think of eyestrain as a minor problem," says Tobi Bergman, a member of the New York Committee for Occupational Safety and Health... "But when it is an almost daily occurrence, eyestrain is a serious health problem, which may cause temporary deterioration of vision."

Some people may consider tired and sore eyes, headaches, sore muscles and irritability "minor" problems that are not truly disabling. However, as Tobi Bergman points out, "the combined impact of these problems on a repeated basis can be serious, and by its cumulative stress-producing effect it may be disabling. In any case, the extreme discomfort takes its toll, if not on life itself, then on the quality of life."

Staring at anything for a long time is stressful for the eyes. NIOSH, the National Institute for Occupational Safety and Health, recommends a fifteen minute break for every two hours at the screen. This break will alleviate the tension that builds up from staring at the screen and from looking at blinking letters.

You can also help minimize fatigue if you position the screen to decrease the glare. Reflected glare makes the letters on the screen more difficult to read and increases visual discomfort. VDTs should not be placed near or facing a large window. If necessary, you can reduce excess window light with blinds or heavy drapes.

As you adjust the lighting to decrease glare, keep in mind that artificial light is a relatively recent invention and that our eyes thirst for natural, full-spectrum light much as our bodies thirst for water. One of the

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health hazards of all office jobs is the lack of natural light.

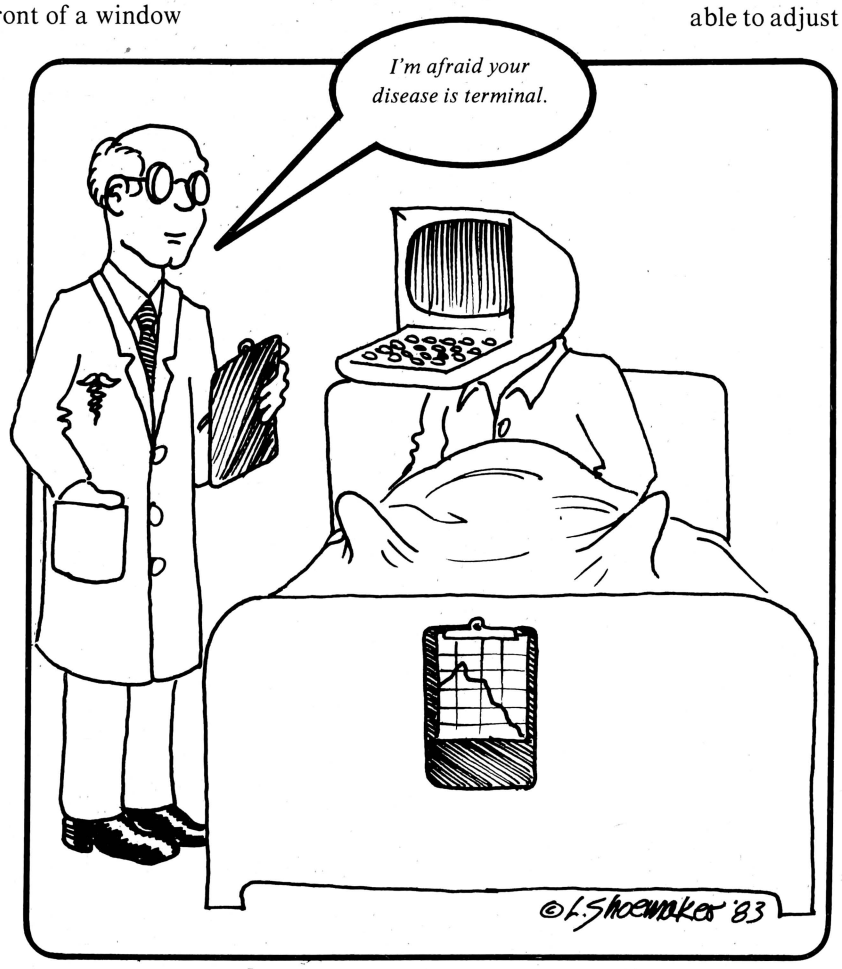
Background or contrast glare is a more serious problem than glare from windows. As Tobi Bergman describes it, "The operator has to read a lighted image from a dark screen. If the general lighting is overly bright or the screen is located in front of a window or a white wall, the iris decreases the size of the pupils to limit the light reaching the retinas. The result is to cause the image to appear less bright and to create difficulty for operators who are working at the screen intensely for long durations. General lighting should be decreased, but if operators must work from paper copy they should be provided lamps for that purpose. If possible, paper copy should be provided on other-than-white paper so that the strain caused by frequent adjustment from the dark screen to the bright paper and back is reduced.

"Neutral-toned wall colors and office furniture also help to reduce contrast glare. But if the lights are dimmed, the windows shaded and the walls darkened, the offie atmosphere may become depressing, and perhaps more stressful in other ways."

An exercise called palming, adapted from the Chinese, helps to relax and restore the eyes. To palm, sit with your elbows propped up on a cushion or table. Shake out your hands and then gently place the palms over the eye sockets without touching the eyelids at all or applying any pressure. Softly close out the light and allow the eyelids to close. Breathe deeply. Give your eyes at least five minutes of this rest.

Posture and Back Strain

Backaches that are related to postural strain from sitting at a terminal can occur in the upper, lower, or middle area of the back. Neck aches, fatigue and headaches may all be undetected symptoms of back strain. It is of the utmost importance to design the work station for maximum comfort. Sitting for long periods of time in an uncomfortable position is extremely exhausting and draining. It can eventually cause distortions in the normal curvature of the spine, which, in turn, may damage the disks between the vertebrae.



If at all possible, use a VDT with a detachable keyboard. Then you can position the keyboard low enough for your hands to rest comfortably, and still keep the screen high enough to see without straining your neck.

If you are not working with a detachable keyboard, it's especially important that the rest of the workstation is flexible. You should be able to adjust the height of your chair, the height of the keyboard, and the distance between yourself and the screen. Use a comfortable chair which supports your lower spine.

Regular exercise helps to release back tension developed from staying in the same sedentary position for long periods of time. The book *Stretching* by Bob Anderson gives numerous exercise sequences which you can use as a starting point to develop a regular exercise routine or incorporate into your existing routine. *The Back Book* by Anne Rush is an excellent source for further information about taking care of your back.

The NIOSH booklet, *Health Protection For Operators of VDTs*, states that VDTs may emit low but potentially dangerous levels of radiation, including x-rays, microwaves, ultraviolet (UV) light, and infrared light. It goes on to say, "In theory, machine parts that produce radiation are shielded and radiation does not endanger the operator or others working nearby."

NIOSH studies of Blue Cross workers and members of the Newspaper Guild report that there is no sub-

● *Exercise, take breaks from your CRT, and watch out for radiation!* ●

stantial radiation danger. However, fears of low level radiation associated with the cathode ray tube abound. Although it is well-known that high levels of radiation can cause damage to living tissue, low levels of radiation are quite controversial. No one knows how hazardous low doses of radiation are, what a truly safe level of exposure is, or what the cumulative effects of long term exposure to radiation may be.

The following incidents indicate only some of the possible hazards we currently know about. Unfortunately, as more people use VDTs over a longer period of time, the dangers will likely become more evident.

In 1977 two young copy editors at the *New York Times* who had been using VDTs on a daily basis for less than a year developed cataracts. They believed that these cataracts were a direct result of radiation emitted by the VDT. David Elsen, director of research and information at the Newspaper Guild, has stated that since 1977 ten members of the Guild have developed cataracts.

A central figure in the study of VDT-induced cataracts is Dr. Milton Zaret, professor of opthamology at the New York University Bellevue Medical Center in New York City. According to *Vegetarian Times*, Zaret "has been studying radiation induced cataracts since 1952, and has often been criticized, insulted and ignored by private industry, government agencies and fellow physicians. But his work is well-documented, he is gaining support, and he presents convincing arguments that CRT display systems may indeed be dangerous...

"Cataracts caused by non-ionizing radiation (that is, radiation in the radio frequency, microwave, infrared and ultraviolet regions of the electromagnetic spectrum) have a distinct trademark — they appear not within the lens itself, but in the connective tissue capsule which surrounds the lens. The causes of such a cataract could thus be ascertained by a competent examiner."

Dr. Zaret has many causes to illustrate his point... But he is at odds with many vested interests and is critical of efforts that have been made, allegedly to protect and reassure the public. On May 12, 1981, testifying before the House Committee on Science and Technology, he stated:

"Early on, NIOSH studied the *Times* and concluded that there was no problem. Every aspect of its study was flawed... One is its reference to 1.0 milliwatts per square centimeter as being a safety standard for ultraviolet radiation. That figure was designed to minimize the incidence of keratitus, an acute, self-limited inflammation of the cornea which rarely results in any serious sequalae (after-effects). It offers no protection from the delayed appearing cataractogenic (cataract-causing) action of ultraviolet radiation. It now appears the chronic, long-term exposure to UV intensities... (1/10,000 that of the current safety standard)... may have been the figure that NIOSH should have used.

"Other forms of non-ionizing radiation may induce cataracts, but claims are made that levels of these are either within safety standards or undetectable. Herein lie two assertions of questionable logic: (1) simply because radiation isn't detectable doesn't mean that it isn't there; biological systems are far more sensitive than instruments, and the processes by which we respond to a physiological insult are largely a mystery and (2) safety standards are often based on short-term guesswork or power politics instead of solid information."

there's panic on the switchboard, tongues are ties in knots
some come out in sympathy, some come out in spots
some blame the management some the employees
and everybody knows it's the Industrial Disease

— from the song "Industrial Disease" by Dire Straits © 1982 Chariscourt Ltd.

The radiation issue is not just a question of cataracts. Between October and December 1979 four of the seven women who worked near VDTs in the classified ad department of *The Toronto Star* gave birth to babies with moderate to severe defects. Although this cluster is statistically significant, it is rarely mentioned in the discussions of radiation hazards. As a result of this finding several Canadian firms, including Bell Canada, now offer pregnant women the right to refuse VDT work.

A *Wall Street Journal* reporter quoted the former *Toronto Star* employee who gave birth to a son with a nearly fatal heart defect as saying: "Any (one) of those machines doesn't give off enough radiation at a time to harm, but I wonder about the cumu-

lative effects of radiation... It just seems like we're going to be the asbestosis people of the future."

What can you do about radiation? You can buy equipment that is relatively radiation-free, such as that with FCC approval. You can shield against microwave and RF (radio-frequency) radiation with metal housings. You can decrease your exposure if you feel any negative effects, or if your state of health puts you at special risk.

Above all, if you are pregnant or if you may become pregnant, you should avoid any contact with computer equipment, even in the next room. *The Toronto Star* cluster is not unique; three others have been reported in the United States, with typically 50% miscarriage rates, stillbirths, and with defects in many of the live births.

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Ed. note: see also:

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MailMerge: The WordStar Printing Robot

Option For Automating Mailing List Operations, and Merging/Printing Files and Labels

by Cheryl Rhodes & Tony Bove

MailMerge is an optional overlay file supplied separately for owners of the WordStar word processing program. Both WordStar and MailMerge are products of MicroPro International (San Rafael, CA), are available from your local software dealer. Some computers, notably the Osborne 01 portable, come supplied with WordStar and MailMerge.

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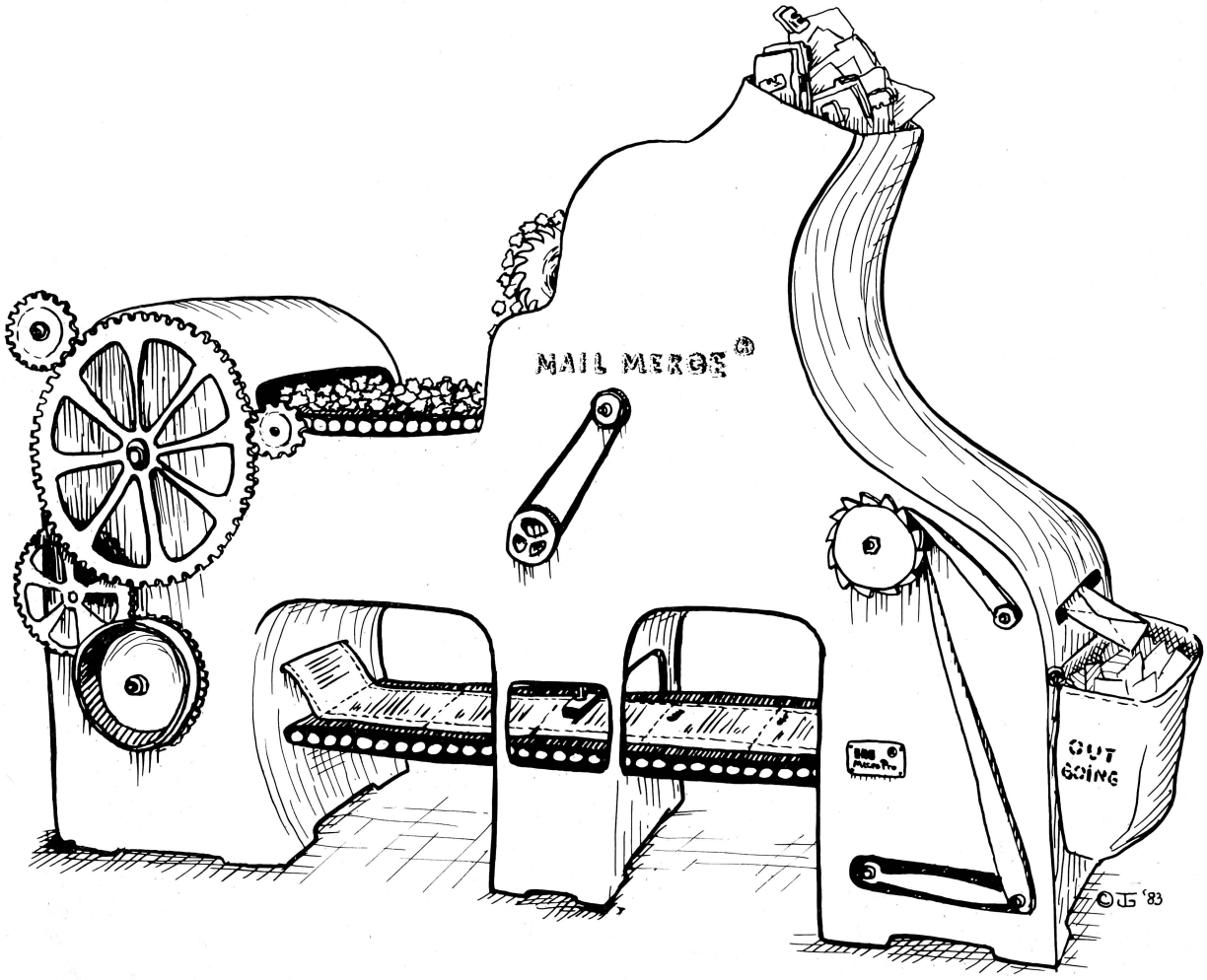

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software dealer. Some computers, notably the Osborne 01 portable, come supplied with WordStar and MailMerge.

MailMerge is not a fully automated program for mailing and merging operations. It is a set of tools for building your own automated operations — in a way, it is like a programming language.

Before this puts you off — "you say it's like a programming language? Oh no!!" — keep in mind that MailMerge is very inexpensive compared to more sophisticated mailing list and data base management programs. Some systems come already supplied with MailMerge and WordStar, and if you take the time to learn how to use them, you can perform sophisticated operations with these packages.

You put MailMerge commands in your text files to control how text will be printed. You also put MailMerge commands in special command files to control the printing operation. These commands consist of variables (similar to "string variables" in programming languages) and precise controls over margins and printing effects.

MailMerge helps you create form letters with the correct names and addresses from a data file, and print the names and addresses onto mailing labels. MailMerge will also let you control the printing of several files in succession (as in chapters of a book), merge files of "boilerplate" text with your documents, set up form letter or document printing operations to be handled by an operator, and even override WordStar's print settings for special print operations.

MailMerge is not a data base management system, nor is it even a mailing list maintenance program. MailMerge is an extension to WordStar that lets you use WordStar to create the form letters, mailing lists, and boilerplate files.

MailMerge is a sophisticated version of the typical WordStar print operation. Rather than typing ***P*** from WordStar's no- file menu for standard printing, you type ***M*** for the MailMerge command which performs the printing for you.

In addition to normal printing, MailMerge can read data fields from any textual data file. It can read a name, address and zip code from a mailing list if it knows the order of the data. It cannot, however, maintain mailing lists by itself.

You create your form letters, "boilerplate" paragraphs and other documents with WordStar. You can also type names and addresses "data entry style" using a MailMerge command file, as we show later in "MailMerge Automation." DataStar, another program from MicroPro, lets you define a screen for data entry (not described in this article — perhaps in a future issue).

MailMerge acts like a smart printing command that knows how to substitute real data words for variables, reform the paragraph where the substitution occurred, and print the result. MailMerge is also smart enough to change left margins, reset justification or ragged-right margins, and override other WordStar printing commands imbedded in the text you are printing.

MailMerge is not, however, a fully automated form letter printing system or mailing label printing system. *You* can turn it into one by using MailMerge's commands imbedded in your text files. You can also set up automated print operations using MailMerge commands in a *command file*.

Caution...

A word to the wise and foolish: experiment first before typing a long mailing list, form letter, or set of boilerplate files.

Get familiar with your printer before performing experiments. For example, see if your printer handles continuous form paper, which has perforated margins with holes for continuous paper feeding (your printer needs a "tractor feed" contraption to handle the continuous forms). If it does, we recommend using continuous forms because they are quicker to use than single sheets (unless you have an automatic sheet feeder).

If you intend to print onto mailing labels, a tractor feed mechanism is essential. Most label "sets" supplied for printers are attached to continuous forms with perforated margins for use with tractor feed mechanisms. Without the tractor feed, the labels may "drift" during printing.

Without a tractor feed mechanism and continuous forms paper (or sheet feeder), you have no choice but to use single sheets of paper in your printer, and you *must always* type ***Y*** (for yes) in answer to the **PAUSE FOR PAPER CHANGE BETWEEN PAGES** question when WordStar (or MailMerge) asks it. If you don't, you risk damaging your printer's platen by printing on it directly when there is no paper.

Whatever printing experiments you try with the WordStar or MailMerge print commands, be they slightly "buggy," a little sloppy, or downright abominable, you can always *stop printing* from WordStar or MailMerge by pressing ***P*** (or ***↑KP*** from within WordStar's editing mode) to **STOP PRINT**.

Symbols and Typeface Conventions

In examples and text we use ***this typeface*** to show commands and text you type at your keyboard, and **this typeface** to show system messages.

We use the special " ↵ " symbol for the RETURN key (CR or ENTER on some keyboards), and the up-arrow (" ↑ ") symbol for the Control key (CNTL, CTRL or ALT on some keyboards).

In addition, in this article we show the WordStar symbols usually displayed at the far right side of your screen:

M shows the end of a MailMerge command.
P preceded by a line of dashes shows a page break.
〈 shows a hard RETURN (a typed RETURN, not a "soft" RETURN inserted by WordStar to re-form paragraphs).
\+ shows a line extended past the right margin.
. shows the end of the file (displayed after the last line of the file).

These symbols are shown in all examples and listings of WordStar files; however, they do not appear in printed results.

MailMerge Commands

You select the MailMerge command from the no-file menu. MailMerge acts as a "smart" printing command. MailMerge will not only print the file — it will also perform functions specified in "dot" commands in the file.

Dot commands are used in WordStar text files to control

printing and pagination. You may already be familiar with such commands as ***.PA*** to end a printed page, or ***.OP*** to omit page numbers while printing.

WordStar "dot" commands are so-called because they begin with a "dot," better known as a *period*, in the first column position of a line of text. Since you never start a line of text with a period, WordStar and MailMerge automatically react to such lines of text and treat them as special commands.

MailMerge understands a certain limited language consisting of the WordStar and MailMerge dot commands imbedded in your documents (displayed when you edit your documents, but normally not printed).

To use MailMerge's dot commands, you should already be familiar with WordStar's dot commands (see *User's Guide* #2). We include several WordStar dot commands in this tutorial because they are necessary for certain MailMerge operations.

Dot commands on the whole are not very forgiving. If you make a typing mistake, or use the wrong dot command, or neglect to use appropriate commands you haven't learned yet, you may end up printing gibberish and wasting paper.

Setting Up MailMerge

MailMerge is supplied in a file called MAILMRGE.OVR on a disk with many sample form letters, lists, etc. To run WordStar and MailMerge, you need your WordStar program files (WS.COM or whatever you've named it, WSOVLY1.OVR, and WSMSGS.OVR), and the MailMerge overlay file (MAILMRGE.OVR).

We suggest that you use your CP/M system disk in drive A (containing PIP and other CP/M utility-programs) for the complete WordStar/MailMerge program and overlay files.

Osborne users have no trouble fitting these files within the 80K of available space on Osborne system disks. (MailMerge is called MERGPRIN.OVR on the Osborne).

Whether or not you have room on your system disk for other files, you should use drive B for text files and mailing lists. Typical operations are simplified by following certain conventions, like using drive B for text and data files, and drive A for programs and utility commands.

The following example shows how you can use PIP (on the system disk in drive A) to copy MAILMRGE.OVR from the supplied master disk to another disk containing the rest of the WordStar program:

1. Place your working WordStar — CP/M system disk in drive B, then move to drive B and type a Control-***C*** (hold down CTRL, CNTL or ALT, and type ***C***). Then move back to drive A.

   A⟩*B:*↩
   B⟩↑*C*
   B⟩*A:*↩
   A⟩

2. Use PIP to copy all overlay files (files with the ".OVR" extension) to the WordStar program disk. First type ***PIP*** and press RETURN:

   A⟩*PIP*↩
   ***

3. When the asterisk (*) appears, replace your system disk in drive A with the MailMerge master disk. Then type this expression:

   B:=A:*.OVR↩

4. When the asterisk reappears, press RETURN to leave the PIP program:

   *↩
   A⟩

Place your WordStar/MailMerge — CP/M system disk in drive A. When you are ready to start WordStar, put your text — mailing list disk in drive B, then change to drive B (using the ***B:↩*** command). Perform a Control-***C*** (hold down CNTL, CTRL or ALT, and type a ***C***) to "wake up" the disk in drive B, and start WordStar from drive B:

A⟩*B:*↩
B⟩↑*C*
B⟩*A:WS*↩

To run MailMerge, type ***M*** while in the no-file menu. The action is similar to selecting the ***P*** option for printing.

By the way, you should run MailMerge only after putting MailMerge commands and codes in your text files. You use WordStar to write boilerplate text, form letters, small mailing lists, or other data files. You can use other programs for data entry, such as DataStar, if these programs can produce files in MailMerge's format.

What Is a Form Letter?

You probably get them in the mail — "personalized" form letters that include your name or company name within the body of the letter. You get them from slick magazines, insurance companies, sweepstakes forms, etc. Now, with MailMerge, you can send your own form letters.

In the broadest sense, a form letter is a letter that has a general form and is used as a model for specific letters. The form letter would have all of the information except specific names, addresses, company names, etc.

You create the form letter with WordStar, and type the specific data in another separate WordStar file. Use MailMerge to print specific letters by printing a form letter. MailMerge substitutes the specific data for the generalized data fields in the form letter.

Variables

Use WordStar to type a form letter like the one shown in figure 1. Our sample form letter (figure 1) has *variables* (data fields) such as ***&Name&***, ***&Addr1&***, ***&Date&***, etc., that you would want to use in your form letter. Our sample is a form letter freelance writers can use to query editors of various magazines.

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```
&Date&                                                                  <
                                                                        <
&Name&                                                                  <
&Magazine&                                                              <
&Addr1&                                                                 <
&Addr2&                                                                 <
&City&, &State&  &Zip&                                                  <
                                                                        <
Dear &Name&,                                                            <
                                                                        <
Would you like an article titled "&ArticleTitle&" for publication
in  &Magazine&?   I  am prepared to sell first and second  serial
rights.                                                                 <
                                                                        <
If you are interested please respond quickly, as I plan to send a
query to other magazines.  Thank you for your attention.  Feel
free to call me at any time.                                            <
                                                                        <
                                        Sincerely,                      <
                                        Lance Prolific                  <
                                                                        <
&Postscript&                                                            <
                                                                        .
```

Figure 1. *A sample form letter with variables (&Name&, &Addr1&, etc.).*

Form letter variables always take this form: ***&Name&***, where ***Name*** describes the data item (from a data file or typed at a later time) to be substituted for the variable in the text.

Variable names (words or phrases between the ***&*** symbols) cannot be longer than 40 characters, and must begin with a letter. The rest of the name can consist of letters, numbers, or hyphens, but no other symbols or spaces. Use descriptive names such as ***&City&***, ***&Zip&*** and ***&ArticleTitle&***. Use UPPER and lower case letters where necessary to identify obscure variables.

You can create a form letter, and change it at any time to reflect changes in your data files, or to add more variables. We recommend that you first create an all-purpose, or *prototype* form letter with variables but without MailMerge codes, then add MailMerge codes to copies of this prototype letter, making each copy a form letter for each general application.

For example, a prototype letter for making editorial inquiries could be copied and modified into several different form letters — one for science fiction magazines, one for computer magazines, one for popular magazines, one for newspapers, etc. You may have different mailing lists to use with these letters — one for sci-fi magazines, one for computer magazines, etc.

While creating your form letter, you should keep track of your variables by making a list of each item. You should also decide how the data should be printed. For example, we chose to have two address variables — ***&Addr1&*** and ***&Addr2&*** — to accommodate long addresses and apartment or suite numbers.

We would make the following list when creating the form letter in figure 1:

Date

Editor's Name

Magazine

Addr1
: Street address or box number.

Addr2
: Optional apt. or suite number, or foreign address.

City
: City, or province and city if not in U.S.A.

State
: Two-letter code for U.S. state (or country name).

Zip
: U.S. zip code, Canadian zip code, etc.

Article Title
: Title of the article or work for sale.

Postscript
: Optional P.S. at the end of the letter.

The form letter in figure 1 is a prototype letter for use in different MailMerge activities. Before adding any more information that would make it a form letter for a MailMerge activity, you should save the letter in a disk file. Use a filename that identifies the file as containing the most general form of the form letter (e.g., FORMZERO.LTR).

Before making the letter specific enough to use in a Mail-

Merge activity, you should learn more about how MailMerge can find specific data from a file containing a mailing list.

What Is a Mailing List?

There are many different ways to keep and maintain a mailing list with a computer. To use MailMerge, you must already have a mailing list — MailMerge simply captures names, addresses and other data items to print form letters or mailing labels.

Since mailing lists can take many different forms, this question must be re-phrased to "What does MailMerge expect a mailing list to be?"

MailMerge expects a mailing list to be a CP/M data file, with each item of data separated from the next by a comma or a RETURN key (called a "carriage return," CR or RETURN on some keyboards and in some manuals). Usually RETURN is used to end a set of data items called a *record*.

A data item can be a word, a number, a set of digits and characters in a row, a partial word or alphanumeric code, a blank space, or nothing at all! A *null value* (which is not the number zero but the absence of any value or character) is an item of "nothing."

You can use WordStar to type data items, one after another, into a file. MailMerge assumes that each item is separated from the next one by a comma or a RETURN key.

The convention of using commas or the RETURN key to separate data items (*data values*) is not MailMerge's own particular convention — it is one which is followed by many different CP/M-compatible programs, especially BASIC programs that write data to a file using PRINT or PRINT FILE statements.

Your mailing list can be as simple or as complex as your needs. You can even keep versions of one mailing list, each in a different format (for different activities); however, updating each version might be a problem.

To use any mailing list with MailMerge, the data items in each record must be separated by commas and/or RETURN keys, and they must be in exactly the same order in each record. Usually commas are used within a record, and RETURN is used to end the record. You must know the *order* of the data items to use MailMerge commands.

Data Records

You can type a mailing list into a file using WordStar, or you can set up more sophisticated-looking data entry screens using DataStar. Somewhere between these extremes is the ability to create "data entry screens" with MailMerge, as described later.

If you are using WordStar, you should use *non-document mode* (the ***N*** option from WordStar's "no-file" menu) to enter the mailing list data.

Why use non-document mode? You don't want WordStar to insert extra spaces or RETURN keys to justify your lines of text. RETURN is used to separate data items, and extra spaces would show up in the form letter as data.

You should end each set of items with a comma, followed by RETURN. RETURN marks the end of a set of data items (a record). Each record can be a different size, but you organize each record to have the same number of data items — e.g., each would have the magazine name, editor's name, address line 1, address line 2, city, state, and zip code data items.

To type such records, you should reset your right margin to the highest number of columns — 240. This will allow your records to hold at least 240 characters, including commas used as separators. To change the right margin, type ***↑OR*** followed by ***240*** (To type ***↑OR***, hold down your Control key and type ***R***).

Here are three such records (not real magazines or editors):

BIT-THE-DUST,Mark Ettinghype,500 Pages Ave.,Suite E,Nashua,NH,00459,↩
KILOBORED,Wayne Blue,450 Pages Ave.,Suite B,Nashua,NH,00459,↩
PC Universe,Don Newage,Merincourt Lane,,Larksparrow,CA,94602,↩

All three records end with a comma, followed by RETURN. Although you can use RETURN by itself to separate data items within a record, we do not advise it unless some of your records will have more than 240 characters (we don't advise having such large records, either).

If the last data item of a record happens to be a blank, and you press RETURN to end the record without ending the last data item with a comma, MailMerge may skip the data item and use the first field of the next record as the last field of the previous one (got that?).

In other words, use a comma after the last field, and before the RETURN. MailMerge sees a comma and RETURN, and considers it to be the end of the record.

What if you want a comma to be part of your data item? If you use quotation marks (“”)to "quote" the entire item, MailMerge will recognize that the entire item is contained within quotation marks (including the comma within them).

For example, if the address included a company name such as "Blue Inc., 450 Pages Ave.," you could type the entire address, including comma, within quotation marks:

KILOBORED,Wayne Blue,"Blue Inc., 450 Pages Ave.",Suite B,Nashua,NH,00459,↩

The entire data item includes the comma in "Blue Inc., 450 Pages Ave." because the entire data item is enclosed within quotes.

In the third record, there are two commas after ***Merincourt Lane***. Our variable list includes an ***Addr2*** variable for an optional apartment or suite number, or long addresses that will not fit on a single line of a mailing label.

Since this record has no need of the optional address field, we don't use it; however, we have to leave a null value in that data field. Consequently, there are two commas, with a null value for the data field defined by them.

Placement of data fields is very important. Your MailMerge commands will decide the order of the information, and you must use that same order in all records.

We start each record with the magazine name and then the editor's name (for the ***&Magazine&*** and ***&Name&*** variables). This order makes it easier to to sort records by alphabetically magazine name.

```
BIT-THE-DUST,Mark Ettinghype,500 Pages Ave.,Suite E,Nashua,NH,00459,      <
KILOBORED,Wayne Blue,"Blue Inc., 450 Pages Ave.",Suite B,Nashua,NH,00459,<
PC Universe,Don Newage,Merincourt Lane,,Larksparrow,CA,94602,             <
PC Globe,Skip Collegiate,1199 Fourth St.,,San Referral,CA,94901,          <
PC Corridor,Nancy Dogooder,2765 Maynard Way,,Sangria,CA,92103,            <
VaporWare Magazine,Knot Readiyett,P.O. Box 594-E,,San Quentin,CA,94901,   <
Electronic Junkmail,Ralph Spoilsport,3339 Bulkrate Road,Dept.3C,El Modem,+
InfoDull,Dr. Gonzo,30 Liddy St.,Suite 200,Mellow Park,CA,94025,           <
Abuser's Guide,Al Batross,Compound 43C,Containment Bldg.2069,Liverless,CA+
                                                                          .
```

Figure 2. *A typical mailing list (with false magazines, names and addresses) to use with the form letter in figure 1.*

We also placed the zip code field in a strategic place — at the end of each record — for later sorting by zip code. It makes sense to know exactly where each piece of data is located on the data line, so that you can find specific data and sort your data based on any one of the data fields.

Sorting is accomplished only with separate programs, like SuperSORT (from MicroPro International), which sorts ASCII text files (*to be described in a future issue of* User's Guide).

An example of our mailing list file is shown in figure 2. We deliberately altered magazine names, addresses, and so on, to provide generic examples of the types of information MailMerge can accommodate. Please do not take these names, addresses or magazines literally!

Do not separate data lines with blank lines, especially between records, since a blank line is interpreted as a data item (it ends with a RETURN). A record must have the same number of data items in the same sequence, so that MailMerge can find the proper items to substitute for variables. Use Control-***OR*** to set the right margin to its greatest value, ***240***, to prevent word-wrap in mailing list lines.

Preparing a Form Letter

Make a copy of your prototype letter to use in your MailMerge experiments. Save your letter by typing ↑***KD***, and type ***O*** from WordStar's no-file menu, then type the name of the prototype letter (FORMZERO.LTR) and the name of the new copy (we use QUERY.FRM for our editorial query letter).

You can select WordStar's document mode to edit the copy, but turn off justification while typing in the MailMerge commands (use the ↑***OJ*** command, where ↑ stands for the Control key). Turn justification back on again for the body of the query letter.

Referring to the list of variables in the form letter, separate the variables that need values from the mailing list from the variables that need other values. List the mailing list variables in the same order used to store the data items in the mailing list:

Variables for mailing list items:
Magazine, Name, Addr1, Addr2, City, State, Zip

Variables for other items:
Article Title, Date, Postscript

With the variables separated into ones whose data come from the mailing list, and ones whose data come from elsewhere, we are ready to use two MailMerge commands: ***.DF*** and ***.RV***.

Define a File, and Read Variables

The ***.DF*** command tells MailMerge which data file to use for the data items. In this case, the data file is the mailing list COMPUTER.MAG.

The ***.RV*** command "reads" (substitutes) a data item for each variable on the command line from the file named with the ***.DF*** command.

Type the following command lines at the beginning of your form letter, using your variable names and the name of the file containing your mailing list (COMPUTER.MAG is the name of our list). Each command must start with a period, also known as a "dot" (.), in column one of the command line:

```
.DF B:COMPUTER.MAG↵                                  M
.RV Magazine,Name,Addr1,Addr2,City,State,Zip↵        M
```

After typing these commands, WordStar may change the page break display, or tell you to move the cursor back to the beginning of the file to recalculate the page length. Do not be alarmed by this — WordStar's and MailMerge's dot commands are not counted as lines of real text (since they won't be printed, either), and each time you type a dot command, WordStar must recalculate the printed page breaks.

Whenever you type a period or dot (.) in column one, WordStar displays a question mark (**?**) at the far right side of the screen on that line. When you finish typing a MailMerge dot command, the question mark changes to an **M** to denote a MailMerge command.

The ***.DF*** ("Data File") command defines ***B:COMPUTER-.MAG*** as the data file. Although we use drive B as the "logged" disk for text files, we still specify the ***B:*** to make sure the right disk is chosen for the file.

If you want a more generic definition for the data file, you can leave off the drive letter prefix. This would take away the requirement that the file reside on drive B, and let you store the file on the "logged" disk.

We typed our variable names in ***.RV*** command to coincide *exactly* with the order of data items in our mailing list file

(shown in figure 2). We also use RETURN to end the ***.RV*** command line, imitating the use of RETURN at the end of each mailing list record.

The ***.RV*** command must account for every variable that needs a data item from the mailing list. The ***.RV*** commands must also have variables that correspond to each data item in a record of the mailing list — from company name to zip code — whether or not the data items are used in the form letter.

For example, if your form letter uses only the name and zip code data items, you still have to have a variable for *every* item in the record — therefore, you would have to use the ***.RV*** command as shown.

Ask For a Variable

There are three variables in the form letter, **&ArticleTitle&**, **&Date&** and **&Postscript&**, which are not yet satisfied. These data items are not in the mailing list file for good reason: they may change for each specific letter.

The ***.AV*** command ("ask for variable") lets you define variables that will receive values you will type when you execute the MailMerge command to print specific letters. For each letter, the ***.AV*** commands ask for values:

```
.AV ArticleTitle↵                M
.AV Date↵                        M
.AV Postscript↵                  M
```

Figure 3 shows the form letter which, at this stage of evolution, which has MailMerge commands for getting information from a mailing list and more information from the keyboard.

NOTE

We assume you have a two-drive system, that your WordStar program files are on the disk in drive A with other system and program files, and that your text files, form letters and mailing lists are on disks in drive B; therefore, our form letter and mailing list files are assumed to be in drive B. If you use a single-drive system, or your disk drives are set up in a different way, be sure to change the ***.DF*** command in QUERY.LTR to the appropriate drive letter prefix. Use no prefix if your "logged" disk contains the form letter and mailing list.

A MailMerge Experiment

If you followed the examples so far, and have the equivalent of a COMPUTER.MAG file (mailing list shown in figure 2) and a form letter QUERY.LTR (shown in figure 3), and QUERY.LTR has the appropriate ***.RV***, ***.DF*** and ***.AV*** commands, you should plunge ahead into experimentation by selecting the ***M*** command from WordStar's "no-file" menu.

Similar to the printing command, ***M*** for MailMerge starts by asking for the file to **MERGE/PRINT**, and then asks a series of questions about the printing operation. If you don't want to waste paper, and you have at least 24K of disk space on your text file disk, you should answer the following question with a ***Y*** for yes, and the name of a file to hold the experimental "printable" output:

```
DISK FILE OUTPUT (Y/N)? Y↵
OUTPUT FILE NAME? RESULTS↵
```

```
.DF B:COMPUTER.MAG                                                    M
.RV Magazine,Name,Addr1,Addr2,City,State,Zip                          M
.AV ArticleTitle                                                      M
.AV Date                                                              M
.AV Postscript                                                        M
&Date&                                                                <
                                                                      <
&Name&                                                                <
&Magazine&                                                            <
&Addr1&                                                               <
&Addr2&                                                               <
&City&, &State&  &Zip&                                                <
                                                                      <
Dear &Name&,                                                          <
                                                                      <
Would you like an article titled "&ArticleTitle&" for publication
in  &Magazine&?   I  am prepared to sell first and second  serial
rights.                                                               <
                                                                      <
If you are interested please respond quickly, as I plan to send
a query to other magazines.  Thank you for your attention.  Feel
free to call me at any time.                                          <
                                                                      <
                                        Sincerely,                    <
                                        Lance Prolific                <
                                                                      <
&Postscript&                                                          <
                                                                      .
```

Figure 3. *Our form letter (QUERY.LTR) with MailMerge commands and variables, ready for an experiment.*

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The rest of the questions can be answered simply by pressing RETURN for each question. If you are brave (or foolish) enough to actually print the results (if you pressed RETURN only, or typed ***N*** to the above question), you can always stop the printing operation by typing a ***P*** while the printer is printing (*not* while the computer is asking questions).

How many specific letters will MailMerge print? MailMerge will print a version of the form letter for *every data record* in the data file defined in the ***.DF*** command. To MailMerge, a data record is one complete pass through all ***.RV*** commands to read values for variables.

Before MailMerge starts "printing" the specific letters, it will display the following messages for the **ArticleTitle**, **Date** and **Postscript** variables in the ***.AV*** commands.

Respond as shown for the first three questions, then use Control-***R*** followed by RETURN to repeat the answers for each question:

ArticleTitle? ***Confessions of a High Priest of Jargon*** ↩ ⟨
Date? ***February 5, 1983*** ↩ ⟨
Postscript? ***Computerspeak explained in this article!*** ↩ ⟨
ArticleTitle? ↑***R*** **Confessions of a High Priest of Jargon** ↩ ⟨
Date? ↑***R*** **February 5, 1983** ↩ ⟨
Postscript? ↑***R*** ***Computerspeak explained in this article!*** ↩ ⟨
.
.

Nine letters should be "printed," since there are nine data records in COMPUTER.MAG at this time. MailMerge will print a specific letter for each one, up to the last one, unless you stop printing by pressing ***P***.

NOTE

You cannot interrupt the MailMerge operation when MailMerge is asking a question. If you want to interrupt or stop a printing session, answer the question somehow, and press RETURN, and *then immediately* press ***P*** before it has a chance to ask another question!

Results

If you performed this experiment, you will learn a lot about MailMerge by checking your results. By using WordStar, another text editor (like ED), or using only the TYPE command, you can take a look at the RESULTS file which holds the printable output from the experiment.

Figure 4 shows the first letter of the RESULTS file. Do not be alarmed by the placement of the letter on your electronic page — the entire letter is offset eight spaces from the left margin because, in all printing operations, WordStar and MailMerge use a *page offset* value of eight spaces from the extreme left side of the paper.

This action is correct for paper pages, but this electronic page holding the results is not suitable for printing. Delete these eight spaces from every line, and you'll see the letter as it should look on an electronic page. (Page offset is controlled by the ***.PO*** command, used in "Mailing Labels" examples later in this article.)

One feature shows itself in these results: MailMerge knows how to substitute different size data items (**BIT-THE-DUST** and **Abuser's Guide**) for the same variable (**&Magazine&**), and it *automatically re-forms paragraphs* after doing the substitutions. MailMerge substitutes new data, and also right-justifies the lines of the letter.

Since you intend to use many different size article titles, you should edit your QUERY.LTR file and place *soft hyphens* between large words like "publication" and "magazine." When MailMerge re-forms paragraphs, it cannot ask

```
February 5, 1983

Mark Ettinghype
BIT-THE-DUST
500 Pages Ave.
Suite E
Nashua, NH  00459

Dear Mark Ettinghype,

Would you like an article titled "Confessions of a High Priest of
Jargon"  for publication in BIT-THE-DUST?   I am prepared to sell
first and second serial rights.

If you are interested please respond quickly, as I plan to send a
query to other magazines.  Thank you for your attention.  Feel
free to call me at any time.

                                        Sincerely,
                                        Lance Prolific

Computerspeak explained in this article!
```

Figure 4. *The first specific letter in the RESULTS file, created from the form letter (QUERY.LTR), with MailMerge substituting names and addresses from a mailing list (COMPUTER.MAG), asking for values from the keyboard, and re-forming lines after making the substitutions.*

you to supply such hyphens during printing. You can put them in before printing, using the ↑***OE*** command to turn soft hyphens **on**.

A problem that shows up in the RESULTS file is the awkward page breaks and page numbers. Letters are "printed" into the file without page breaks in appropriate places, and page numbers are incremented for each new letter. You will use WordStar dot commands (next section) to fix these problems.

Another problem (or feature) is the blank line that sometimes occurs for the second address variable **&Addr2&**. Sometimes this variable does not have a value, and MailMerge leaves a blank line. Some people may not care about this; if you do, you can customize your form letter to take care of this problem, as described later in this article. However, be forewarned that the fix to this problem makes it nearly impossible to print on two-across or three-across mailing labels without some errors.

Controlling Paging

To prepare the form letter for the actual printing of specific letters, you need to include two WordStar commands: ***.OP*** to turn off page numbering (since your form letter is only one page), and ***.PA*** to cause each letter to start on a new page.

The problem is this: the ***.DF*** and ***.RV*** commands, which cause repeated processing of a form letter with different values for variables, does not alter the page numbering. Therefore, if you are printing 100 one-page letters using a form letter and a mailing list, and you don't use ***.OP*** or ***.PN*** commands, each letter will have a page number (the first will be page one, the fiftieth will be page 50, etc.).

The ***.OP*** command simply omits page numbers. This is extremely useful for printing one-page letters, mailing labels, or envelopes, since no page numbers are used:

.OP ↩ ⟨

If your form letter is longer than one page, use the ***.OP*** command on the first page to omit the page number, and then use the ***.PN 2*** command at the top of page two of the form letter, to make sure that the second page of each letter is numbered **2**. Any page after page two is numbered consecutively from **2**:

.PN 2 ↩ ⟨

(Although the first page of a letter is usually unnumbered and an ***.OP*** command is used, you can, if you wish, put the ***.PN 1*** command at the top of page one to number all pages properly. You would not need the ***.PN*** command on any other page.)

In addition, you will want each letter to *begin* on a new page. A final ***.PA*** command at the end of the form letter forces the page out of the printer, to start the next print operation at the top of the next page. The ***.PA*** command is also used in the envelope form, to force the envelope out of the printer:

.PA ↩ ⟨

Always put ***.OP*** or ***.PN*** commands at the very top of a page or beginning of the file. Always put a ***.PA*** command at the very end of the form letter.

If you forget to use the ***.OP*** or ***.PN*** command, each letter will be numbered consecutively from the first letter. You may, in fact, use this number to number each letter if you so wish (use a WordStar ***.FO*** footer or ***.HE*** header, with ***#***, to place the page number in a footer or header).

Other problems will occur if you leave trailing spaces at the end of the form letter. Always end form letters with a RETURN key. To make sure you have no extra spaces at the end, use the ↑***QC*** command to move the cursor to the end of the file, and press RETURN to create a blank line with no spaces.

Printing a Form Letter

To print the specific letters, load your printer with paper, get it ready to print, and press ***M*** from WordStar's "no-file" menu to execute MailMerge. Answer the questions appropriately for your printer — using the RETURN key to select the "default" pre-set answers. *However*, if you are not using continuous form paper (e.g., if you're using letterhead or stationery), be sure to answer ***Y*** to the following question when it appears:

PAUSE FOR PAPER CHANGE BETWEEN PAGES (Y/N)? *Y*↩

This pause between printed pages will allow you to insert another blank page for printing. To continue printing after inserting the blank page, press ***P***.

To stop the printing at any time (except when answering WordStar's or MailMerge's questions), press ***P***. WordStar will tell you to type either:

- ***Y*** to stop printing altogether ("abandon"). You must choose this if you want to edit the file you are printing.
- ***N*** to resume printing (before typing ***N*** you can make printer or paper adjustments).
- ↑***U*** (Control key and ***U***) to hold and perform editing or other functions with another file (return to printing from where you left off by pressing ***P*** again).

NOTE

The question **NUMBER OF COPIES** does *not* refer to the number of specific letters — it refers to the number of copies of *each* letter. For example, assume your mailing list has nine records. If you answer the **NUMBER OF COPIES** question with ***1*** (or press RETURN), one specific letter is printed for each record, nine in total. If you answer with ***9***, nine specific letters are printed for each record, totaling *81 letters!*

Since MailMerge prints a letter for every data record in the data file, the only way to print a letter for just a few records is to change the ***.DF*** command to define a data file that

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is a subset of the entire mailing list data file. This subset file would contain only the records for which you want to print letters.

You could keep your large mailing list in a master data file (perhaps titled MASTER.MAG), and copy a subset of MASTER.MAG to COMPUTER.MAG (leaving MASTER.MAG intact). To print letters for other magazines (such as SCI-FI.MAG, another subset of MASTER.MAG), you have to change the ***.DF*** command in QUERY.LTR to specify SCI-FI.MAG. Of course, we show a more automated approach later in this article.

Setting a Variable For Several Letters

What if I want the same article title, date and postscript for all of the specific letters?

You can set the value of these variables in the form letter using ***.SV*** ("Set Value") commands:

```
.SV ArticleTitle,Confessions of a High Priest of Jargon↩   M
.SV Date, February 5, 1983↩                                M
.SV Postscript,Computerspeak explained in this article! ↩  M
```

To change the information for the printing operation (and for each letter you print), you only need to edit the ***.SV*** commands in the form letter.

(In "MailMerge Automation" later in this article, we show an automated method of controlling the print operation, including a way to type a new date and postscript once for the entire print operation.)

Using Temporary Files

What if I want a different postscript for only two of the letters, and the usual postscript for the rest of them?

The easiest way to handle this is to single out the records in the mailing list for which you want to print a different postscript. Using WordStar's block marker (***↑KB*** for beginning, ***↑KK*** for ending) and block write (***↑KW***) commands, mark each special record as a block and write the block to a temporary data file.

The first step toward automating your MailMerge operations is to create a temporary file for every operation. You can call the file LIST-IN. Copy whatever list you want, such as COMPUTER.MAG, to LIST-IN and delete the records you do not want to print, leaving only the printable ones.

In QUERY.LTR, change the ***.DF*** command to define the filename LIST-IN. Whenever you are ready to run a MailMerge operation, remember to create a new LIST-IN file to hold a copy of the list. Change the ***.SV*** commands before each printing run, using a different LIST-IN file for each run.

The key to managing these activities is to keep a master mailing list data file such as MASTER.MAG, that contains the records untouched. COMPUTER.MAG, SCI-FI.MAG and other subsets should be available on disk. LIST-IN should be used as a temporary file to hold whatever list records are to be printed in a MailMerge operation.

If you intend to use more substantial mailing lists, you may have guessed by now that using a temporary file for large operations will eat up valuable disk space on your limited floppy disk-based system. Move on to discover more MailMerge commands that can help you automate these operations for larger applications.

Displaying Messages

How can I find out which magazine query is about to be printed, to know what postscript to write?

Those of you who want to write a different postscript for each company must use the ***.AV*** command shown before to ask for a value for the postscript:

```
.AV Postscript↩                                            M
```

You can also use the ***.DM*** ("Display Message") command to display the magazine name before asking for the postscript. After the ***.RV*** commands, but *before* the ***.AV Postscript*** command, type the following command:

```
.DM &Magazine&, Editor is &Name& ↩                         M
```

MailMerge will substitute the current data values for the magazine name and editor's name, before displaying the entire message. The message lets you know which letter is about to be printed, so that you can type a suitable postscript. If you wish, you can type *no* postscript by pressing RETURN.

Skipping Empty Variables

How can I have MailMerge skip any empty variables?

This is tricky, because you have to use a "feature" of MailMerge that actually causes more trouble if you try to print the fields of several records across a page (as you would do if you were printing more than one mailing label across a page).

To show an example of this "feature," you can change the ***&Addr2&*** variable in the form letter so that if there is no second optional address line (between the street address or box number and the city — usually used for apartment or suite numbers), the line does not appear as a blank line. Change the ***&Addr2&*** variable to ***&Addr2/O&*** (using the letter ***O***, not zero). Addresses that do not take up three lines will only take up two lines, rather than leave a blank line in the middle.

This ***/O*** feature should not be used if you plan on printing more than one mailing label across a page. It works in this context because ***&Addr2/O&*** in the form letter sits on its own line by itself.

Figure 5 shows the form letter with all the trimmings. Included is an opening *comment* line — ***..Form Letter to Query Magazine Editors***. Any line starting with *two periods* (rather than one period) is recognized as a comment line about the file.

Printing on Envelopes

If you have a data file of names and addresses, there will come a time when you will want to print at least some of these names and addresses on *envelopes* (mailing labels are discussed next). Assuming your LIST-IN data file is set up like COMPUTER.MAG, the "envelope form" shown in figure 6 will assemble each name and address for suitable printing on envelopes.

```
..Form Letter to Query Magazine Editors                                <
.OP                                                                    <
.SV Date, February 5, 1983                                             M
.SV ArticleTitle,Confessions of a High Priest of Jargon                M
.DF B:LIST-IN                                                          M
.RV Magazine,Name,Addr1,Addr2,City,State,Zip                           M
.DM &Magazine&, Editor is &Name&                                       M
.AV Postscript                                                         M
&Date&                                                                 <
                                                                       <
&Name&                                                                 <
&Magazine&                                                             <
&Addr1&                                                                <
&Addr2/O&                                                              <
&City&, &State&  &Zip&                                                 <
                                                                       <
Dear &Name&,                                                           <
                                                                       <
Would you like an article titled "&ArticleTitle&" for publication
in  &Magazine&?   I  am prepared to sell first and second  serial
rights.                                                                <
                                                                       <
If you are interested please respond quickly, as I plan to send
a query to other magazines.  Thank you for your attention.  Feel
free to call me at any time.                                           <
                                                                       <
                                        Sincerely,                     <
                                        Lance Prolific                 <
                                                                       <
&Postscript&                                                           <
                                                                       <
.PA                                                                    <
-----------------------------------------------------------------------P
```

Figure 5. *Our form letter in its final form, with the necessary dot commands for omitting page numbers and breaking each page. Also included is the .SV command to set the date variable once, the .DM command to display a message (each company, product and name as they are read), and the .AV command to ask for a postscript for each letter.*

The envelope form includes the return address; omit these lines if your envelopes have preprinted return addresses.

Printing Controls

In WordStar, column one of your display (your displayed left margin) does *not* correspond to the edge of the printed page. WordStar automatically moves the printing element to the right by a *page offset value* — usually set to eight columns (approximately four-fifths of an inch). You can change this offset with the ***.PO*** command to start printing closer to the edge of the paper.

To control the left margin in the envelope form in figure 6, we use the ***.PO 0*** (zero) command. This sets the page offset to zero, to start the printing at the left edge of the envelope.

To control the top and bottom margins, we set the top margin to zero with an ***.MT*** command, and the bottom margin to zero with an ***.MB*** command. Usually the top margin is three lines and the bottom margin is eight lines. On a typical 66-line page, these margins leave 55 lines of printed text. We set them to zero because we do not need them.

In the envelope form in figure 6 we also use the ***↑C*** command to create a pause between pages to allow you to insert an envelope. You could also accomplish this pause by answering ***Y*** to the **PAUSE BETWEEN PAGES** question that is asked whenever you try to print something from WordStar (or MailMerge).

Printing on Mailing Labels

Printing on envelopes is useful for a short mailing, but it is too time consuming to insert envelopes for longer mailings (unless you use continuous form envelopes). Continuous mailing label sheets were invented for such operations.

Mailing label sheets are described as "one-across," "two-across," "three-across," etc. (or "one-up," "two-up," "three-up," etc.). A "one-across" label sheet has one column of labels; a "two-across" sheet has two columns of labels, etc. These labels are attached to continuous forms paper — you need a tractor feed mechanism on your printer to feed them properly through your printer.

We design a "label form" that puts the mailing list variables in the appropriate places for printing onto labels. This form must have a layout that matches the labels. For example, if your mailing labels are approximately 25 characters wide and are in three columns across the page, your form lay-

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```
..Form to print on envelopes                                          <
.OP     (Omit page numbers.)                                          <
.MT 0   (No top margin,                                               <
.MB 0    and no bottom margin.)                                       <
.PO 0    (No page offset -- printing starts at edge of envelope.)     <
.DF B:LIST-IN                                                         M
.RV Magazine,Name,Addr1,Addr2,City,State,Zip                          M
^C                                                                    <
.. ("^C" pauses printing to let you insert envelope.)                 <
.. (You could, instead, answer the printing question "PAUSE FOR       <
.. (PAPER CHANGE BETWEEN PAGES?" with "Y" for yes.)                   <
Lance Prolific                                                        <
P.O. Box 3050                                                         <
Stanford, CA 94305                                                    <
                                                                      <
                                                                      <
                                                                      <
                                &Name&, Editor                        <
                                &Magazine&                            <
                                &Addr1&                               <
                                &Addr2/O&                             <
                                &City&, &State&  &Zip&                <
                                                                      <
                                                                      <
.PA  (This rolls the envelope out of the printer.)                    <
----------------------------------------------------------------------P
```

Figure 6. *This form can be used with MailMerge to print the names and addresses from the mailing list shown in figure 2 onto envelopes.*

out must be more complicated than for labels that are only one column on a page.

Assume you have a mailing list such as COMPUTER-.MAG shown earlier, perhaps with company names rather than magazine names. Your list could have any type of information, but most lists start with an identifying keyword such as a magazine name or company name, with name and address information following it, and possibly additional reference information following the zip code.

To print a one-column sheet of mailing labels, use the MailMerge commands and the form shown below. Note, however, that you will have to experiment with the form and possibly change its left margin, or change the page offset, to make sure that it prints the labels properly.

One-Column Labels

For the label form, we change the page offset to 1 space with the ***.PO*** command, to start printing one space to the right of the edge of the label paper. We also set the top margin (***.MT 0***) and the bottom margin (MB 0) to zero.

Note that the form does *not* end with a ***.PA*** command, since the labels follow each other closely on the same page. However, the form includes two blank lines — one at the beginning of the label portion, and one at the end of the form — because there are two blank lines between the printed lines of a label and the printed lines of the next label.

The example also introduces *comment lines*. A line that begins with at least two periods (..) is not printed, nor is it regarded in any way as a command. WordStar and MailMerge ignore such lines altogether, enabling you to use them as comments in your form (similar to comments in program listings).

Comments can also be typed following WordStar and MailMerge dot commands that either require a number, or do not require any text or numbers following it (as shown in the example below). You cannot use comments in dot commands that require variable names, file names, or other text.

Figure 7 shows how the form should look after it is completed.

```
..Form to print on 1-column labels↩                                   <
.OP      (Omit page numbers.)↩                                        <
.PO  1   (Page offset 1 space in from edge of label.)↩                <
.MT  0   (No top margin,↩                                             <
.MB  0    and no bottom margin.)↩                                     <
.DF  B:LIST-IN↩                                                       M
.RV  Magazine,Name,Addr1,Addr2,City,St,Zip↩                           M
..Blank line follows↩                                                 <
 ↩                                                                    <
&Name&, Editor↩                                                       <
&Magazine&↩                                                           <
&Addr1&↩                                                              <
&Addr2&                                                               <
&City&, &St& &Zip&↩                                                   <
 ↩                                                                    <
..end of form (blank line precedes this end comment)↩                 <
                                                                      .
```

Multiple-Column Labels

To print the names and addresses from LIST-IN on a two-column, three-column or four-column sheet of mailing labels, you will have to use a special WordStar command that lets

```
..Form to print on 1-column labels                                  <
.OP      (Omit page numbers.)                                       <
.PO 1    (Page offset 1 space in from edge of label.)               <
.MT 0    (No top margin,                                            <
.MB 0     and no bottom margin.)                                    <
.DF B:LIST-IN                                                       M
.RV Magazine,Name,Addr1,Addr2,City,St,Zip                           M
..Blank line follows                                                <
                                                                    <
&Name&, Editor                                                      <
&Magazine&                                                          <
&Addr1&                                                             <
&Addr2/O&                                                           <
&City&, &St& &Zip&                                                  <
                                                                    <
..end of form (blank line precedes this end comment)                <
                                                                    .
```

Figure 7. *A mailing label form for a one-column sheet of mailing labels.*

you *overprint lines.*

For our example, we use a three-column format. First, set up your ***.RV*** commands in a way that captures three records at once — to be able to print the data from three records horizontally, over three columns. For example, you have to print three company names horizontally before printing their addresses.

The following example shows how to type the form for three-column labels, using the ***↑P↩*** command and the TAB key.

↑P (Control-***P***), followed by ↩ (RETURN key), inserts a "carriage return" without a "line feed" so that the printer's carriage returns without moving down one line. The ***↑P↩*** command causes the next line to print on the same line, overprinting the line. ***↑P↩*** also displays a dash (-) at the far right side of the screen for that line.

You use the TAB key in the next line following the ***↑P↩*** command to let the carriage skip over the already-printed label and print the label in the next column. You could also use spaces. You must use something, otherwise the label will print over the previous one. (The TAB key is shown as ***↑I*** because a Control-***I*** also functions as a TAB key on most keyboards.)

This example also shows two new MailMerge commands: PF (print-time line forming) and ***.RM*** (right margin control):

```
..Form to print on 3-column labels↩                                 <
.OP      (Omit page numbers.)↩                                      <
.PO  1    (Page offset 1 space in from edge.)↩                      <
.MT  0    (No top margin,↩                                          <
.MB  0    and no bottom margin.)↩                                   <
.PF  ON ↩                                                           M
.RM  240    (Set right margin for long lines.)↩                     M
.DF  B:LIST-IN↩                                                     M
.RV  Magazine1,Name1,Addr11,Addr21,City1,St1,Zip1↩                  M
.RV  Magazine2,Name2,Addr12,Addr22,City2,St2,Zip2↩                  M
.RV  Magazine3,Name3,Addr13,Addr23,City3,St3,Zip3↩                  M
↩                                                                   <
```

```
L---------- ---------!---------- ---------!---------- ---------R↩<

..blank line follows↩                                               <
↩                                                                   <
&Name1& ↑P↩                                                         -
↑I                    &Name2& ↑P↩                                   -
↑I                    ↑I                    &Name3&↩                <
&Magazine1& ↑P↩                                                     -
↑I                    &Magazine2& ↑P↩                               -
↑I                    ↑I                    &Magazine3&↩            <
&Addr11& ↑P↩                                                        -
↑I                    &Addr12& ↑P↩                                  -
↑I                    ↑I                    &Addr13&↩               <
&Addr21& ↑P↩                                                        -
↑I                    &Addr22& ↑P↩                                  -
↑I                    ↑I                    &Addr23&↩               <
&City1&, &St1& &Zip1&↑P↩                                            <
                                                                    -
↑I                    &City2&, &St2& &Zip2&↑P↩                      <
                                                                    -
↑I                    ↑I                    &City3&,&St3& &Zip3&  +
                                                                    <
↩                                                                   <
..end of form (blank line precedes this end comment)↩               <
                                                                    .
```

The easiest way to line up your columns for the three-column label sheets is to create your own ruler line as shown in the example (above the labels). Create a line of dashes just like WordStar's default ruler line that appears above your text when you're editing with WordStar; however, use only two **!** symbols to mark the two TAB key stops for the second and third columns of labels. Type ***↑OX*** (the letter "O" not zero) to release margins and continue typing dashes past the right margin.

To use the new line as the WordStar ruler line for margins and tabs, type ***↑OF*** after typing the entire ruler line. By typing a ruler line, you can set a right margin greater than your screen width, and set variable tab stops anywhere you like. It is certainly easier to set up a screen with two columns using your own ruler line than it is to clear each default tab stop with ***↑ON*** and set a new one with ***↑OI***.

Keep in mind, however, that the ruler line you type into your file stays there as a line of text. After typing ***↑OF*** to use the ruler line as a margin/tab control line, you can delete the

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```
..Form to print on 3-column labels                                    <
.OP     (Omit page numbers.)                                          <
.MT 0   (No top margin,                                               <
.MB 0    and no bottom margin.)                                       <
.PO 1   (Page offset 1 space from edge of label.)                     <
.PF ON  (Turn on MailMerge page formatting.)                          M
.RM 240 (Set right margin to 240 for label printing.)                 M
.DF B:LIST-IN                                                         M
.RV Magazine1,Name1,Addr11,Addr21,City1,St1,Zip1                      M
.RV Magazine2,Name2,Addr12,Addr22,City2,St2,Zip2                      M
.RV Magazine3,Name3,Addr13,Addr23,City3,St3,Zip3                      M
..-------------------!-----------------------!---------------------+-
..ruler line, missing "L-" at beginning, now is a comment line.)      <
                                                                      <
&Name1&, Editor                                                       -
                        &Name2&, Editor                               -
                                                &Name3&, Editor       <
&Magazine1&                                                           -
                        &Magazine2&                                   -
                                                &Magazine3&           <
&Addr11&                                                              -
                        &Addr12&                                      -
                                                &Addr13&              <
&Addr21&                                                              -
                        &Addr22&                                      -
                                                &Addr23&              <
&City1&, &St1& &Zip1&                                                 -
                        &City2&, &St2& &Zip2&                         -
                                                &City3&, &St3& &Zip3& <
                                                                      <
..end of form (blank line precedes this end comment)                  <
                                                                      .
```

Figure 8. *A mailing label form for a three-column sheet of mailing labels.*

ruler line you typed, or turn it into a comment by changing the first two letters of the line (**L-**) to periods (**..**). If you don't, the line will appear when you print the file. (You may want to print the ruler line as well, to separate each set of mailing labels. If you print the ruler line with the labels, you don't need the ***.PF ON*** or ***.RM*** commands.)

Print-time Line Forming

MailMerge re-forms each paragraph (or line ending with a hard RETURN) in which it performed a substitution (in

```
Mark Ettinghype, Editor   Wayne Blue, Editor        Don Newage, Editor
BIT-THE-DUST              KILOBORED                 PC Universe
500 Pages Ave.            Blue Inc., 450 Pages Ave. Merincourt Lane
Suite E                   Suite B
Nashua,  NH 00459         Nashua,  NH 00459         Larksparrow,  CA 94602

Skip Collegiate, Editor   Nancy Dogooder, Editor    Knot Readiyett, Editor
PC Globe                  PC Corridor               VaporWare Magazine
1199 Fourth St.           2765 Maynard Way          P.O. Box 594-E

San Referral,  CA 94901   Sangria,  CA 92103        San Quentin,  CA 94901

Ralph Spoilsport, Editor  Dr. Gonzo, Editor         Al Batross, Editor
Electronic Junkmail       InfoDull                  Abuser's Guide
3339 Bulkrate Road        30 Liddy St.              Compound 43C
Dept. 3C                  Suite 200                 Containment Bldg.2069
El Modem,  CA 94305       Mellow Park,  CA 94025    Liverless,  CA 94050
```

Figure 9. *The output of the mailing label form in figure 8.*

```
     "He frowned, shuffled his feet, and would not meet my stare.
He gingerly fingered the keyboard of the new computer system,
looked around the store, looked back at the system's display,
fingered the keyboard again.  I knew I had him.  He longed for
the power over his corporate adversaries that the new system
would bring him, but he was powerless to explain his data
processing needs to a high-powered consultant.  I am the high-
powered consultant, and I am about to soak this bird for $7000 in
consulting fees -- more than twice the cost of the system
itself."                                                          <
                                                                  .
```

Figure 10. *The contents of the boilerplate file OPENING.BP.*

the mailing label form, it re-forms every line). MailMerge uses the length of the previous line to re-form each line.

This re-forming could work against your intentions to print on three-column labels (especially on long addresses in the third column, which may accidentally "wrap around" to the next line).

If the first line in the file is a ruler line, the lines are formed according to that line. However, for most applications you will not want to print such a ruler line. The print-time line forming commands let you override or control MailMerge re-forming.

MailMerge's line-former is usually on active duty, watching for substitutions and re-forming paragraphs accordingly, leaving other paragraphs alone. The line-forming is done "by the discretion of MailMerge." You need not use any special dot commands to have line-forming performed; however, line-forming is done according to the margins already used in the text.

To change margin settings with the ***.RM*** (right margin) and ***.LM*** (left margin) commands, or to change line spacing or right-justification, you must use the MailMerge ***.PF ON*** command to put the line-former on active duty for every line.

With line-forming on for every line, you can have MailMerge re-form the entire text to fit new margins. These new margins, line spacing, or justification settings are in control only during printing; the text file settings remain as they were before the MailMerge operation.

If you used the ***.PF ON*** command earlier in a document to change settings while printing, but you want to ignore the MailMerge settings for sections of your document, type the ***.PF DIS*** command before those sections. This cancels the ***.PF ON*** command and returns the line-former to "discretionary mode."

In those extremely rare occasions when you want *no line-forming* done by MailMerge, type the ***.PF OFF*** command to put the line-former to sleep during substitutions.

Inserting Boilerplate Text

A "boilerplate" is a section of a document repeated verbatim in many documents. Examples are copyright and trademark notices, disclaimer notices at the beginnings of manuals, product lists included in a salesperson's reply letter, "stock" statements repeated in many documents, etc.

Suppose you have just written the first draft of a manual and you need both a disclaimer notice and a copyright notice in your preface, but your lawyer is out of town. You can add the message "INSERT DISCLAIMER & COPYRIGHT NOTICE HERE" to the preface and go on working. You or your typist will see the message later and insert boilerplate sections.

There are two good reasons for making a section of text a boilerplate: if the section is repeated in many documents, and if the section is likely to change at a later date (such as a list of available products).

Since boilerplates can be used in a variety of applications, we'll describe one example that follows from previous examples. Suppose, in your magazine query letter, you wanted to include the opening paragraph of your latest article. You would create a small text file containing the opening paragraph of your article — a boilerplate file, perhaps called OPENING.BP.

Using WordStar, create the OPENING.BP file to contain the opening paragraph of the article you are trying to sell to computer magazines. Figure 10 shows a sample opening paragraph. Note that the file does *not* start with a blank line, nor does it end with one, but the paragraph *does* end with a hard RETURN.

Now you can change your query letter to include a new command — the ***.FI OPENING.BP*** command — to insert the boilerplate paragraph in your text at printing time. *You do not have to insert the paragraph into the query letter yourself* — MailMerge will do this automatically, before printing each letter.

The ***.FI*** command makes it easy to maintain a query letter that will work with any article. You simply change the contents of OPENING.BP, and run the letter using the new article title. MailMerge takes care of the rest.

In addition to the ***.FI*** command, you can add a sentence to the query letter that introduces the opening paragraph. Figure 11 shows the new query letter with the additional sentence and ***.FI*** command.

The File Insert Command

During MailMerge operation, the ***.FI*** (file insert) command merges the entire contents of OPENING.BP with QUERY.LTR for output to the printer or to the RESULTS

```
..Form Letter to Query Magazine Editors                                <
.OP                                                                    <
.SV Date, February 5, 1983                                             M
.SV ArticleTitle,Confessions of a High Priest of Jargon                M
.DF B:LIST-IN                                                          M
.RV Magazine,Name,Addr1,Addr2,City,State,Zip                           M
.DM &Magazine&, Editor is &Name&                                       M
.AV Postscript                                                         M
                                                          &Date&       <
&Name&                                                                 <
&Magazine&                                                             <
&Addr1&                                                                <
&Addr2/O&                                                              <
&City&, &State&  &Zip&                                                 <
                                                                       <
Dear &Name&,                                                           <
                                                                       <
Would you like an article titled "&ArticleTitle&" for publication
in  &Magazine&?   I  am prepared to sell first and second  serial
rights.                                                                <
                                                                       <
I've included the opening paragraph of  "&ArticleTitle&" for your
perusal:                                                               <
                                                                       <
.FI B:OPENING.BP                                                       M
                                                                       <
If you are interested please respond quickly, as I plan to send
a query to other magazines.  Thank you for your attention.  Feel
free to call me at any time.                                           <
                                                                       <
                                        Sincerely,                     <
                                        Lance Prolific                 <
                                                                       <
&Postscript&                                                           <
                                                                       <
.PA                                                                    <
-----------------------------------------------------------------------P
```

Figure 11. *A new version of the query letter, including a file insertion command to insert a boilerplate paragraph.*

file. OPENING.BP and QUERY.LTR remain untouched.

You can change the contents of OPENING.BP at any time for any article, and use the boilerplate file with any type of form letter.

The ***.FI*** command has many uses in a document because it performs a simple task: when you print the document, the contents of another file are substituted for the ***.FI*** command line. This other file can be a single word, a paragraph, several paragraphs, a list of items, or a complete document. The merger happens only during the MailMerge operation — the files remain separate.

Use a "hard" RETURN to end an ***.FI*** command line. A "hard" RETURN occurs when you press the RETURN key. WordStar displays a "hard" RETURN with the ⟨ symbol in the far right column of a line (outside the right margin). If the line is a MailMerge command, this symbol changes to an **M**. "Soft" RETURNs are not displayed (they are supplied and removed by WordStar during paragraph re-form operations).

Although you can perform tricky operations with ***.FI*** commands (consult the manual before trying them), this procedure should always be followed, especially if your ***.FI*** command is the last line of your document. End the ***.FI*** command line with a "hard" RETURN, or other MailMerge commands (especially ones that repeat the printing of documents) may malfunction without warning during printing and cause unexpected results.

Always end the boilerplate file with a "hard" RETURN, or you may get unexpected and unwanted results when printing.

You can, of course, ignore this procedure if you've read the manual and know how to use MailMerge and WordStar printing commands. For those who want practical, functional file insertions with no nonsense and no experimentation, end all files with at least one "hard" RETURN.

MailMerge Automation

MailMerge commands apply to the text in the same file as the commands. If you use ***.FI*** to insert a file that contains more MailMerge commands, the commands within the in-

sert file take over for the duration of the insertion, and then relinquish control back to the commands in the original file.

This is similar to Pascal programming, where a program calls a procedure, the procedure takes over and performs its task, and the procedure returns control to the program when it finishes.

MailMerge "programming" can produce automated "programs" that can perform elaborate merging, data entry, and printing operations. To understand how they work, it is best to review specific applications.

Automating the Form Letter

Returning again to our QUERY.LTR, we can now show a more elegant way of providing the date, the postscript and the article title. Introducing the "super-form" for the query letter:

```
..“Super-Form” for query letter operation ↩      <
.DM Type an answer to each item, ↩               M
.DM and press RETURN: ↩                          M
.AV “Today’s date? ”,Date ↩                      M
.AV “Article Title? ”,ArticleTitle ↩             M
.AV “Postscript? ”,Postscript ↩                  M
.FI QUERY.LET ↩                                  M
```

The ***.AV*** commands include *prompting messages* to help a typist answer the questions. You can use any messages you choose, as long as you enclose them in quotes, and follow the second quote with a comma and the name of the variable. The messages cannot be longer than half the width of your screen — you must leave the other half of the screen for the response by the typist, which cannot exceed one "normal" 80-column line.

If you create this "super-form" to run query letters, you can do away with the ***.AV*** and ***.SV*** commands for the variables ***&Date&***, ***&ArticleTitle&*** and ***&Postscript&***. The ***.DM*** command displays messages so that any typist can answer the questions and send out letters.

This "super-form" is an example of a MailMerge *command file.* A command file is simply a text file with MailMerge commands — usually commands to control the printing of documents or letters from boilerplate documents and form letters.

Call your "super-form" LETTER for the following examples. When you are ready, start the MailMerge operation with LETTER:

NAME OF FILE TO MERGE-PRINT? *LETTER* ↩

(In this example, we assume that the LETTER, QUERY.LTR and LIST-IN files are on the disk in drive B, which is also the "logged" disk.)

When you type ***M*** for MailMerge to print each letter, you respond to the ***.AV*** questions with the appropriate values for the date, the article title, and the postscript. LETTER assigns those values to those variables and calls QUERY.LTR. QUERY.LTR uses the same date, article title and postscript for every name in the LIST-IN mailing list.

If you had no mailing list, you could expand LETTER to include ***.AV*** questions for the name and address of each recipient, and delete the ***.DF*** and ***.RV*** commands from QUERY.LTR. Your LETTER "super-form" would have to ask for values for the ***&Name&***, ***&Magazine&***, ***&Addr1&*** and other variables formerly defined in the ***.RV*** command.

If all values come from the keyboard, and no ***.DF*** and ***.RV*** commands are used, only one query letter is printed in one complete MailMerge operation. A simple way to repeat letters of this sort is to specify a number of copies in answer to the **NUMBER OF COPIES?** question. The ***.AV*** questions in LETTER are asked for each query letter.

You can specify a large number of copies, and stop the printing operation whenever you want by pressing ***P*** to **STOP PRINT**. The ***P*** will not be recognized by MailMerge (or WordStar) if you type it when the program is asking a question and waiting for your response. You must type the ***P*** while MailMerge (or WordStar) is doing something else — or press the RETURN key and then ***P*** in rapid succession.

Combining Letter With Envelope

The most typical use of a command file is to control several MailMerge operations at once. For example, you can combine the query letter operation with one that prepares an envelope with the same data.

Edit the LETTER "super-form" to control both the QUERY.LTR and ENVELOPE.FRM MailMerge operations with the following commands:

```
..“Super-Form” for query letter operation        <
.DM Type an answer to each item,                 M
.DM and press RETURN:                            M
.AV “Today’s date? ”,Date                        M
.AV “Article Title? ”,ArticleTitle               M
.AV “Postscript? ”,Postscript                    M
.DM Insert sheet for reply letter ↩              M
.DM and press “P” to continue printing ↩         M
↑PC ↩                                            <
.FI QUERY.LET                                    M
.DM Insert envelope ↩                            M
.DM and press “P” to continue printing ↩         M
↑PC ↩                                            <
.FI ENVELOPE.FRM ↩                               M
.DM Reply letter & envelope finished. ↩          M
```

This version of LETTER prints *all* query letters for names in the LIST-IN mailing list, and then prints all envelopes for the names in the mailing list. This is the ideal situation for users with tractor-feed mechanisms on their printers — they can use tractor-feed paper to print each query letter quickly, and then switch to envelopes to print each envelope.

If you are using QUERY.LTR without a mailing list, you would use ***.AV*** commands in LETTER to obtain each name and address; therefore, MailMerge would print one query letter and one envelope for each set of ***.AV*** questions.

Printing Chapters of a Book

This is another simple example of an automated MailMerge operation. With WordStar you can write each chapter as a separate file to make editing and printing of selected chapters more convenient.

```
..Form to enter data into mailing list                                  <
.OP                                                                     <
.PL 1                                                                   <
.MT 0                                                                   <
.MB 0                                                                   <
.PO 0                                                                   <
.CS                                                                     M
.PF ON                                                                  M
.RM 240                                                                 M
.OJ OFF                                                                 M
.AV "Company name:",company                                             M
.AV "Contact name:",name                                                M
.AV "First line of address:",addr1                                      M
.AV "Second line, if necessary:",add2                                   M
.AV "City:",city                                                        M
.AV "State, two capital letters:",st                                    M
.AV "ZIP Code, 5 digits:",zip                                           M
.AV "Area code & phone number:",phone                                   M
&company&,&name&,&addr1&,&addr2&,&city&,&st&,&zip&,&phone&,             <
-------------------------------------------------------------------------P
                                                                        .
```

Figure 12. *Our ENTRY form for MailMerge-controlled data entry into a mailing list.*

Since floppy disks have a limited capacity, let's assume that all of the chapters do not fit on one disk. For simplicity's sake, assume that chapters one, two and three are on one disk, and chapter four is on another disk. Also, assume that the chapter disks are used in drive B, but the WordStar program and the command file are on drive A, the "logged" drive.

This example introduces the ***CHANGE*** keyword, used with the ***.FI*** command to allow the operator to change a disk. The following command file prints the chapters:

```
..Command file to print book chapters ↩      <
.FI   B:PREFACE ↩                            M
.PA ↩                                        <
.PN   1 ↩                                    <
.FI   B:CHAP1 ↩                              M
.PA ↩                                        <
.FI   B:CHAP2 ↩                              M
.PA ↩                                        <
.FI   B:CHAP3 ↩                              M
.PA ↩                                        <
.FI   B:CHAP4   CHANGE ↩                     M
.PA ↩                                        <
```

The ***CHANGE*** keyword stops the MailMerge operation and displays a message to change disks. You can change the disk in drive B, or leave the same disk in B, and press the RETURN key to continue the MailMerge printing operation.

The example above shows the ***.PN 1*** command used to start chapter one on page one (and still have a numbered preface). Some writers prefer to number a chapter's pages using a chapter number followed by the page number within the chapter, as in "3-5" (chapter 3, page 5). WordStar lets you control this style of pagination in two ways: with the page number footing on any column of the page, or with the page number footing alternating from the right to the left sides of the page (even numbers on the right, odd on the left).

To have the page numbers in CHAP2 (chapter 2) appear as 2-**p** at the left margin of each page, you can place this command line at the beginning of CHAP2:

```
.FO 2-# ↩                                    <
```

The current page number replaces the **#** symbol in each footing. To have the page numbers in CHAP2 appear as 2-**p** in the left margin if **p** is odd, or in the right margin if **p** is even, you can place this command at the beginning of CHAP2:

```
.FO ↑PK                          2-#  ↩      <
```

The ***↑PK*** causes WordStar to skip the spaces between it and the page number when the current page number is odd, so that odd numbers appear at the left margin and even numbers at the right.

With a footing (***.FO***) command in each chapter, you can use the following MailMerge commands in a single command file to print the chapters:

```
..Command file to print book chapters        <
.FI   B:PREFACE                              M
.PA                                          <
.PN   1                                      <
.FI   B:CHAP1                                M
.PA                                          <
.PN   1 ↩                                    <
.FI   B:CHAP2                                M
.PA                                          <
.PN   1 ↩                                    <
.FI   B:CHAP3                                M
.PA                                          <
.PN   1 ↩                                    <
.FI   B:CHAP4   CHANGE                       M
.PA                                          <
```

We use the ***.PN 1*** command before each chapter to start each chapter with a page number of one, so that the "chapter-page" footings are accurate for each chapter.

Data Entry — to a Mailing List

Since MailMerge can "print" to a disk file instead of a printer, you can use a MailMerge command file to set up the data entry questions to build a mailing list.

You create a form as shown in figure 12 (we call ours ENTRY). The data entry form shown below uses ***.AV*** commands with messages that will appear on the screen when the form is run through MailMerge. The messages tell the typist what information to type for each variable. The data entry form starts with several page formatting commands:

.OP↩ ⟨

Omit page numbers (page numbers in a mailing list are mistaken for data items).

.PL 1↩ ⟨

Set the paper length to one line, so that each data record is written to the file in one piece.

.MT 0↩ ⟨

Set the top margin to zero.

.MB 0↩ ⟨

Set the bottom margin to zero.

.PO 0↩ ⟨

Set the page offset to zero (left margin column 1 of screen).

.CS↩ **M**

Clear the screen of all messages.

.PF ON↩ **M**

Turn line re-form on, in order to activate MailMerge printing controls.

.RM 240↩ **M**

Set right margin of the mailing list to 240 columns (records can have up to 239 characters).

.OJ OFF↩ **M**

Turn off right-margin justification in the mailing list, so that data items do not contain "soft" spaces.

The ***.RM*** and ***.OJ*** commands are activated by the ***.PF ON*** command. These three commands help turn the output into mailing list format. The following ***.AV*** commands gather the data from the typist:

```
.AV  "Company name:",company ↩                    M
.AV  "Contact name:",name ↩                       M
.AV  "First line of address:",addr1 ↩             M
.AV  "Second line, if necessary:",addr2 ↩         M
.AV  "City:",city ↩                               M
.AV  "State, two capital letters:",st ↩           M
.AV  "ZIP Code, 5 digits:",zip ↩                  M
.AV  "Area code & phone number:",phone ↩          M
&company&,&name&,&addr1&,&addr2&,&city&,&st&  +
```

If the last line goes beyond your right margin, extend your right margin so that the line is not broken by a RETURN. Do not forget to include the final comma in the last line — this comma, followed by RETURN, marks the end of the record.

With ENTRY created, you are ready to create a mailing list. Run MailMerge, and answer the first three questions as follows:

NAME OF FILE TO MERGE-PRINT? *ENTRY↩*
DISK FILE OUTPUT (Y/N): *Y↩*
OUTPUT FILE NAME? *LIST.1↩*

Press RETURN for the next two questions (starting and stopping page numbers), and answer the following question with the number of records (names with addresses) you will type in this data entry session:

NUMBER OF COPIES (RETURN FOR 1):*30↩*

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We typed ***30*** for thirty names. If you press RETURN without a number, you can enter only one name per session.

We use the filename LIST.1 for the mailing list because we are typing only 30 names at a time. During each MailMerge session, we specify another file such as LIST.2, LIST.3, etc. At the end of each day, we append the files to MASTER.LST using the PIP command:

```
B>A:PIP MASTER.LST=MASTER.LST,LIST.1,LIST.2,LIST.3 ↵      <
```

You could name your mailing list sections according to the time of day, or date, and merge them later in one PIP command. Another method of merging sections of a mailing list is to enter one list in edit mode, and use ***↑KR*** commands to read in the other sections.

Calling Other Command Files

If you plan to use MailMerge often, you can create general purpose command files for automating your operations. For example, you might have four kinds of correspondence:

QUERY.LTR
: The editorial query letter in the previous examples.

QBOOK.LTR
: A query letter to book editors with inserted outline.

PAYUP.LTR
: A payment reminder.

INVITE.LTR
: Personal invitations.

The following command file can organize your form letter, and print an envelope *or* a label. You can also expand the command file to include other activities:

```
..Command form to control merge/print ↵          <
.OP ↵                                            <
.AV "Date: ",Date ↵                              M
.AV "Mailing list name: ",listname ↵             M
.DM You have the following types of form letters: ↵   M
.DM QUERY    QBOOK    PAYUP    INVITE ↵          M
.AV "What kind of letter? ",formname ↵           M
.DM Printing &formname& letter with the &listname& list ↵   M
.FI A:&formname&.LTR
.DM ENVELOPE, 1COLUMN or 3COLUMN labels ↵        M
.AV "Which? ",mailer ↵                           M
.FI A:&mailer&.FRM ↵                             M
```

The above example assumes that you have QUERY.LTR, QBOOK.LTR, PAYUP.LTR and INVITE.LTR form letters on the disk in drive A. The mailing list, whose name is typed at the start of the session, must be defined in the inserted files — in the form letters, *and* in the envelope or label form files. By defining the file in both inserts, all the letters will print out first, and then all the labels or envelopes.

The inserted files must have this command, plus the appropriate ***.RV*** command to retrieve the data, and print formatting controls:

```
.DF B:&listname&.LST
```

This example assumes your mailing list is on drive B and that its name has the extension ".LST."

NOTE

For this command file to work properly with the previous QUERY.LTR example, edit QUERY.LTR and change its ***.DF*** command to the one shown above.

End of Lesson

So far you've learned how to create personalized form letters, use names and addresses from mailing lists for these form letters, use these names and addresses in forms to print mailing labels and envelopes, use boilerplate paragraphs in such letters and in any documents, and automate MailMerge operations to do complicated sets of tasks with ease.

As you may have guessed, these aren't the only activities possible with MailMerge. You can control the printing of your documents and letters in subtle ways, and even override existing WordStar printing controls for special effects. These activities will be described in a future article on MailMerge, although some of the commands are summarized in the accompanying *Impatient User's Guide to MailMerge* in this issue.

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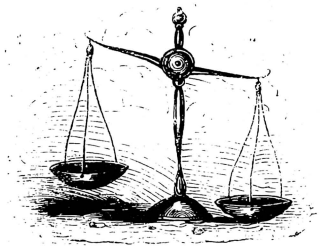

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An Impatient User's Guide...

MailMerge™ Applications

A quick reference guide to MailMerge commands and applications

by Tony Bove & Cheryl Rhodes

Excerpted from a forthcoming pocket reference guide on WordStar (reprinted with permission from Addison-Wesley Publishing Co.), Reading, MA.

Symbols and Typeface Conventions

In examples and text we use ***this typeface*** to show commands and text you type at your keyboard, and **this typeface** to show system messages.

We use the special " ↩ " symbol for the RETURN key (CR or ENTER on some keyboards), and the up-arrow (" ↑ ") symbol for the Control key (CNTL, CTRL or ALT on some keyboards).

MailMerge is an option for WordStar that gives you the ability to:

- Produce "personalized" form letters (letters with the same content bearing different addresses, names, dates, product names, etc.).
- Merge different electronic documents into one printed document.
- Print several documents in succession with one command.
- Print mailing labels and address envelopes.
- Control or override WordStar printing controls and dot commands.

MailMerge is supplied in a file called MAILMRGE.OVR on a disk with many sample form letters, lists, etc. In addition to MAILMRGE.OVR, you need your WordStar program files (WS.COM, WSOVLY1.OVR, WSMSGS.OVR, etc.), to run MailMerge.

To run MailMerge, run WordStar and select ***M*** from the no-file menu. The action is similar to selecting the ***P*** option for printing. However, MailMerge operations are controlled by MailMerge *dot commands*, MailMerge *variables* and other codes in the text files being printed. You can't simply run MailMerge — you must first *put MailMerge commands and codes in your text files*, create your mailing list, and insert MailMerge variables in your text (for the "personalized" data used in form letters).

MailMerge *dot commands* start with a period ("dot") in the first column of a line in a text file. Here's an example of the ***.RV*** command that reads data from a mailing list for an addressee's name and address:

.RV NAME, ADDR1, ADDR2, ADDR3, ZIP ↩

The following summary of MailMerge commands is grouped into the following applications:

- Preparing and printing form letters, envelopes and mailing labels.
- Numbering pages or overriding page numbers for form letters and long documents.
- Inserting "boilerplate" text into documents.
- Repeating files in printing operations.
- Automating MailMerge operations with command files.
- Overriding printing and margin controls.

The summary is organized in this manner because different applications use the same set of MailMerge commands in different ways, and the use of such commands is not intrinsically obvious. Therefore we repeat some of the MailMerge commands used in each application without repeated explanations, but with a reference to the command's explanation in another application.

Form Letters, Envelopes and Labels

You can print form letters using data from a file created as a mailing list, or from data you type for each letter as you print them. Envelopes and label sets can also be printed using data from either source: data file, or you (or an operator) at printing time.

Data From a Data File

.DF d:filename CHANGE

Define the file holding the data (usually a mailing list). This file's data will be used for the repeated printing of the form letter containing the ***.DF*** command. If you also specify ***CHANGE***, the operation will pause, and MailMerge will ask you to change the disk in the drive ***d:*** specified with ***filename*** (or the current "logged" disk, if no drive is specified with ***filename***).

.RV var,var,...

Read data from the ***.DF*** file for variables in the document or letter.

&var&

A variable whose data value is read in with the ***.RV*** or ***.AV***

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command, or set with the ***.SV*** command. Such variables are used in the text of letters and documents (e.g., ***Dear &NAME&***).

&var/O&

A variable as above; however, if the data value read for the variable is empty or null, this variable will not cause a blank line (e.g., ***&ADDR2/O&***). This is most often used to suppress the "extra" address line for apt. or suite numbers.

.SV var, data

Set the variable to ***data*** (e.g., ***.SV DATE, Jan. 31***) for the entire MailMerge operation.

.DM message — see "Automating the Operation"
↑PC — see "Automating the Operation"
.CS — see "Automating the Operation"
.OP — see "Page Numbering"
.PA — see "Page Numbering"
.PN n — see "Page Numbering"
.CP n — see "Page Numbering"

Data Typed at Printing Time

.AV "message",variable,length

Ask for a value for ***variable***, which corresponds to ***&var&*** described above; however, you do *not* surround ***variable*** with ***&*** symbols. After selecting MailMerge to start printing, the ***.AV*** command displays a question mark, or the ***message*** you specified in quotes with the ***.AV*** command. You respond (or an operator responds) by typing a value (followed by RETURN) which is used for the variable in the printed form letter or document. If you specified the optional ***,length*** (an integer such as ***5*** preceded by a comma), the ***.AV*** command will only allow you (or an operator) to type a value of that length (e.g., 5 characters for zip code).

.FI filename

Insert a file's contents during printing, and print the contents as controlled by MailMerge commands in the file. The ***.FI*** command is used at the end of a form letter to *call itself* — if the name of the form letter is used for ***filename***. This is one way to repeat the printing of a form letter (until you or an operator stops printing by typing a ***P*** to **STOP PRINT**). The ***.FI*** command has other uses — see "Inserting Files."

.RP n — see "Repeating Files"
&var& — see "Data From a Data File"
.SV var,data — see "Data From a Data File"
.DM message — see "Automating the Operation"
.CS — see "Automating the Operation"
↑PC — see "Automating the Operation"
.OP — see "Page Numbering"
.PA— see "Page Numbering"
.PN n — see "Page Numbering"

Page Numbering

MailMerge will number pages consecutively for each complete file printed; however, you can print multiple letters from one form letter file. Use ***.OP*** for single-page form letters, or paging controls for multi-page form letters, to control page numbering.

.OP Omit page numbers — a WordStar command used in MailMerge operations to prevent inaccurate page numbers in multiple instances of form letters.

.PA Force the start of a new page in the printer. This is a WordStar command used often in MailMerge form letters and documents (e.g., to start the next iteration of a form letter on a new page).

.PN n Force pagination to begin at page ***n***, or resume counting pages where it left off (if used without ***n***). Sometimes used with ***.OP*** to selectively control paging.

.CP n Conditional page — force the start of a new page only if *n* number of lines will not fit on the current page.

Inserting Files: Boilerplate Text

A section of text inserted into many documents is known as a "boilerplate" section. You can insert any textual file, including a file of only MailMerge commands (a *command file*), using the ***.FI*** command.

.FI filename CHANGE

Insert a file's contents during printing, and print its contents in place of the ***.FI*** command line. Use ***.FI*** to insert a boilerplate section of text into documents at printing time. You can include a drive prefix (such as ***B:*** for drive B) with the ***filename***. You can also add the optional command ***CHANGE*** to force a pause in the printing operation to allow a change of the disk in the drive specified by ***filename*** (or current "logged" drive if no drive is specified in ***filename***). NOTE: a ***.DF*** in an *inserted* file will repeat printing of the contents of the inserted file as it would repeat a form letter.

Repeating Files

If you use a ***.DF*** command with a form letter, the letter is repeated over and over until the data file runs out of data. If you're not using a data file, you can repeat a form letter by specifying a number of copies after invoking MailMerge, or using the ***.FI*** command at the end of the form letter to insert the same form letter again (have the form letter call itself at the end). For the ***.FI*** command, see "Data Typed at Printing Time."

If you want to repeat an *inserted* file (such as a boilerplate section), use the ***.RP*** command in the inserted file. You can use a ***.DF*** in an inserted file to repeat printing of the contents of the inserted file as it would repeat a form letter.

.RP n Repeat printing of the file ***n*** times, or (without ***n***) until you or the operator intervenes by typing ***P*** to **STOP PRINT**, or until the form letter or document runs out of data in the data file (usually a mailing list).

You don't need the ***.RP*** command in the same file as a ***.DF***, which is used to repeat form letters with data from a data file. An ***.RP*** command is useful in a file to be inserted with the ***.FI*** command, to repeat printing of the inserted file.

Automating the Operation

These commands are useful for setting up MailMerge operations that display messages, pause printing for operator actions, and call other command files containing MailMerge commands.

.DM message

Display a message on the screen. The message can contain MailMerge variables (e.g., ***.DM THE NAME IS &NAME&***).

↑PC Pause the printing operation to insert an envelope, etc. Insert a **↑C** in your text file by holding down your CONTROL (CTRL, CNTL or ALT) key and typing ***PC*** (***↑PC***). To pause for paper change between pages, use the MailMerge setting for "paper change pause" by answering ***Y*** (for yes) to the **PAUSE FOR PAPER CHANGE BETWEEN PAGES?** question after invoking MailMerge (instead of ***↑PC***).

.CS Clear the screen (used to clear the screen of ***.AV*** and ***.DM*** command messages, and any other messages or typed input.

.FI filename CHANGE or
.FI &nameofform& CHANGE

Insert a file's contents during printing, and print the contents in place of the ***.FI*** command line. In this application, a ***.FI*** is used to insert the entire document or form letter that contains MailMerge commands. A "high level" *command file* for automating MailMerge operations would consist of a few ***.AV*** commands — one to ask for the name of the document or form letter (and its associated data files, if any), and a ***.FI*** command to insert the form letter or document corresponding to the variable ***&nameofform&*** (the ***.AV*** command would ask for ***nameofform***).

The ***filename*** specified with ***.FI***, or substituted for ***&nameofform&***, may include a drive prefix (such as ***B:*** for drive B). You may also specify the command ***CHANGE*** to force a pause in the printing operation to allow a change of the disk in the drive specified by ***filename*** (or current "logged" drive if none is specified in ***filename***).

Printing Controls

These controls are used to override the automatic line forming (or re-forming) that MailMerge performs during printing to accommodate data substituted for variables in the text. Typical reasons for doing this include printing with different margins than the ones used for editing, to force ragged right margin during printing of a justified document, or to set desired margins where MailMerge activities produce undesirable results in print.

If you care where page breaks occur in the printed versions of your form letters or documents, use ***.CP*** (conditional page) commands where appropriate (see "Page Numbering"). Another trick is to add spaces within the ***&*** symbols you use to surround your MailMerge variables, to accommodate data that is larger than the variable name.

To override automatic line forming and control it in areas of a document or in an entire document, use the following commands:

.PF ON Turn on print-time line-forming, so that the following printing control commands will work.

.PF OFF Completely suppress all line-forming during printing, even automatic line-forming (even if data substituted for a variable lengthens a line past its margin).

.PF DIS Leave print-time line-forming to MailMerge. You use ***.PF ON*** to use the other printing control commands described below, and ***.PF DIS*** to return control to MailMerge.

.RM DIS
or
.RM n Set the right margin to column ***n*** (1-240), or use ***DIS*** to set it back again to the margin in the document. ***.RM*** has no effect unless ***.PF*** is ***ON***.

.LM DIS
or
.LM n Set the left margin to column ***n*** (1-240), or use ***DIS*** to set it back again to the margin in the document. Use with caution if your document contains paragraphs entirely indented ("hanging indents") or text outside the left margin. ***.LM*** has no effect unless ***.PF*** is ***ON***.

.LS DIS
or
.LS n Set the line spacing to ***n*** (1-9), or use ***DIS*** to set it back again to the line spacing used in the document. ***.LS*** has no effect unless ***.PF*** is ***ON***.

.OJ ON Form justified lines during printing, no matter what the justification setting is in the document. This only works if ***.PF*** is ***ON***.

.OJ OFF Form ragged-right lines during printing, no matter what the justification setting is in the document. This only works if ***.PF*** is ***ON***.

.OJ DIS Leave justification up to MailMerge. The right margin will be formed by MailMerge according to the document sent through ("input to") MailMerge, or according to use of the special ***.IJ*** command below.

.IJ ON Interpret the right margin setting of the document as justified, before sending the document through MailMerge (where it can be changed again by ***.OJ*** or ***.RM***). This only works if ***.PF*** is ***ON***.

.IJ OFF Interpret the right margin setting of the document as ragged right, before sending the document through MailMerge (where it can be changed again by ***.OJ*** or ***.RM***). This only works if ***.PF*** is ***ON***.

.IJ DIS Leave justification up to MailMerge. The right margin will be formed by MailMerge according to the document sent through ("input to") MailMerge.

Did those last commands seem confusing? The following chart summarizes them. Note that the ***.IJ*** commands are used in special situations requiring precise control over sections of text. The ***.IJ*** commands can trick the MailMerge scanner into thinking that normally ragged-right text is justified, or vice-versa; however, the ***.IJ*** commands are used mostly to exercise MailMerge, not to control the output.

MailMerge Print Controls

Controls	
.PF ON	Turn on print control commands.
.LS n	Set line spacing ***n*** (1-9) lines.
or	
.LS DIS	Line spacing same as input file.
.LM n	Set left margin column ***n*** (1- 240).
or	
.LM DIS	Left margin same as input file.
.RM n	Set right margin column ***n*** (1- 240).
or	
.RM DIS	Right margin same as input file.
.IJ ON	Force justified right margin on input.
or	
.IJ OFF	Force ragged-right margin on input.
.IJ DIS	Right margin on input same as input file.
.OJ ON	Force justified right margin on output.
or	
.OJ OFF	Force ragged-right margin on output.
.OJ DIS	Right margin output same as input file.
.PF DIS	Return printing control to MailMerge.

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WordStar™ File and Print Summary

File manipulation and printing commands

by Tony Bove & Cheryl Rhodes

Excerpted from a forthcoming pocket reference guide on WordStar (reprinted with permission from Addison-Wesley Publishing Co.), Reading, MA.

Symbols and Typeface Conventions

In examples and text we use ***this typeface*** to show commands and text you type at your keyboard, and **this typeface** to show system messages.

We use the special " ↵ " symbol for the RETURN key (CR or ENTER on some keyboards), and the up-arrow (" ↑ ") symbol for the Control key (CNTL, CTRL or ALT on some keyboards).

File Operations

A *text file* is a single collection of textual information stored on disk. When you create a file, you also give it a *filename* such as SAMPLE.TXT (a "handle" to use when referring to the file). You can also change a file's name using WordStar or CP/M commands.

Filenames consist of one to eight characters composing a *primary name*, and zero to three characters (following a period) composing an *extension*. Extensions are not required for text files, but many users follow the conventions of using popular extensions for various types of text files: ".TXT" (general text file or document), ".DOC" (program documentation), ".ASC" (source text for a program), ".LST" (listed text for a program), ".LTR" (text of letter), ".FMT" (text of formatted form letter or boilerplate used with MailMerge), and ".T" (temporary text file).

Filenames can also include a *drive prefix* specifying a disk drive holding the disk containing the file. If you provide no drive prefix, WordStar and CP/M look for the file on the *currently logged disk* (you can change the currently logged disk in WordStar or in CP/M).

WordStar always creates a "backup" file to hold a version of your file as it was before your current edit session. Every time you save SAMPLE.TXT, you create a new SAMPLE.BAK (".BAK" extension) holding the previous version of SAMPLE.TXT.

NOTE

Therefore, as a rule, *never select a file with a ".BAK" extension as a file to edit*. Let WordStar handle the ".BAK" files automatically. You can erase them when you no longer need them (when they occupy needed space on your disk). If you need to edit a ".BAK" file, first rename it to have an extension other than ".BAK".

Although a file may contain only part of a long document (such as a book), we use the terms *file* and *document* synonomously, and present information about handling long documents next.

WordStar can edit only one file at a time, but during an edit session with one file, it can perform other operations with other files. With WordStar you can rename or erase files, copy a block of text to another file (this is called "writing a block to a file"), and insert the contents of another file into the file you are editing (this is called "reading a file into your file").

Commands for File Operations

↑KW WRITE BLOCK TO FILE: write a marked block to another file (copy is written, and original block remains unchanged).

↑KR READ AND INSERT FROM FILE: read an entire file and insert its contents at the cursor location.

↑KO COPY A FILE: copy a file to another disk or file.

↑KE RENAME A FILE: change a file's name.

↑KJ DELETE A FILE: delete a file from disk.

↑KP PRINT A FILE: send a file to the printer. See "Printing Operations" for more details on printing a file.

↑KL CHANGE LOGGED DISK DRIVE: change the currently "logged" disk drive. Default setting: drive from which you executed the WordStar program.

NOTE

After a ***↑KL*** command, your file directory should display filenames on the newly "logged" disk. However, if you are already editing a file on the formerly "logged" disk, your save operations will still save the edited file on the former disk. In other words, you can "log" a different disk, and perform file operations on that disk, while still editing a file on the former disk.

↑KF DIRECTORY ON/OFF: turn off or on the "logged" disk drive directory display. Default setting: ON.

Filename Entry Editing

Whenever WordStar presents you with the option to type a filename, you can use filename entry editing commands to make WordStar remember a former filename used during a WordStar session. WordStar can only remember the filename used previously in that command. For example, WordStar can remember the last file you selected with the ***D*** command (to edit the file). To edit the file again, type ***D*** again (from the no-file menu), and type ***↑R*** to re-call

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the last filename. The filename should appear, ready for you to press RETURN to enter the filename, or to use another entry editing command to edit the filename.

These entry editing commands work with every WordStar command that requires a filename. WordStar can remember, for example, that you are editing SAMPLE.TXT and that you last wrote a block to OUTCAST.TXT. If you have just begun your WordStar session, the entry restore commands will have no effect.

↑*R*	Restore the previous entry.
↑*Y*	Delete the entry and start over again. This command does not cause WordStar to forget the previous entry.
↑*S*	Delete a character in the entry.
↑*D*	Restore the previous entry character by character.
↑*F*	Display the file directory for the currently "logged" disk.
↑*U*	Cancel the command.

Long Documents

WordStar needs extra space on the "logged" disk to make at least one copy of the entire file you are editing. WordStar needs even more space every time you move the cursor from the end of a long file *backwards* through the file. For these and other reasons, you should use only short files, and you should break long documents into smaller files.

There are several problems that may occur when you break up a document into smaller files:

- When printing the files, a page break occurs between each file.
- Automatic page-numbering only occurs within a file.
- You need to give more than one print command to print the document.

You can get around these problems in different ways. If the long document is not yet finished, there is no need to worry about extra page breaks, page numbers, or the number of print commands. If the document is finished, you can use the PIP command in CP/M to append the separate files together to form one large file:

```
A>PIP
B:WHOLE.TXT=A:PART1.TXT,A:PART2.TXT,A:PART3.TXT↵
```

To solve the page numbering problem when printing multiple files (without combining the files), use the ***.PN*** command to change the starting page number in the files printed after the first file.

File Size

You can tell if a file is too large by first moving to the end of the file (using the ↑***QC*** command), and then using the ↑***QR*** command to move the cursor backwards in the file to the beginning. If the ↑***QR*** operation takes more than a few seconds, your file is getting too large. Many writers keep their files at six printed pages or less.

To determine a file's size, you can select the ***R*** option from the no-file menu to run the CP/M STAT program. To get the no-file menu, however, you must perform a save (or abandon) (↑***K***) operation. With the no-file menu showing, type ***R***. When the **COMMAND?** message appears, type ***STAT***, then type a space and the complete name of your file, and then press RETURN. The ***STAT*** command without a filename displays the number of *bytes* (characters) left on disk.

If you are editing a large file and you don't want to save or abandon to get the no-file menu, you can still determine the number of characters (bytes) in the file by turning off the page break display with the ↑***OP*** command. The **PAGE** message at the top of your display changes to **FC**=*cccc*, where *cccc* is the number of characters in your file.

Editing Techniques for Large Files

The easiest way to divide a file in half is to mark half of the text as a block and use the ↑***KW*** command to write the block to a new file. After writing the block to a new file, first save the old file (↑***KD*** command), then edit the new file to be sure the text arrived safely. After verifying the write operation, re-edit the old file and delete the half of the text you had marked before as a block (mark it as a block again, and use the ↑***KY*** command to delete the block).

If your file is so large that an operation to move the cursor backwards causes a **DISK FULL** error, you have to take special precautions:

- Avoid moving the cursor backwards. To move to the beginning of the file, use the save-and-resume editing command (↑***KS***) to both save your edits and allow the cursor to be placed anywhere in the file.
- In either the WordStar command line in CP/M or from the no-file menu (with either the ***D*** or ***N*** selections), type the filename, then type a space and a *second* drive prefix (e.g., ***B:***) before pressing RETURN. Each subsequent save operation will alternate between the "logged" drive and this second drive you specify. Be sure you have enough space on this second drive.
- Organize your changes to the file so that your editing activities take you *forward* through the file rather than backward. Use ↑***KS*** to save and re-edit the file frequently, and to move back to the beginning of the file.
- Avoid block move or copy operations where the original block and insertion areas are far apart. Use the ↑***KW*** and ↑***KR*** commands to write a block out to a temporary file and read the file into the insertion area, and then delete the temporary file with a ↑***KJ*** command.

Printing Operations

WordStar allows you to form a document on your screen, and have it look exactly the same way in print. The ↑***O*** (on-screen) menu provides most of the printing features that are duplicated on the screen — left and right margin settings, justification or ragged right, line centering and line spacing, and whether or not to include page breaks (actual page breaks are changed with the ***.PA*** command, discussed in "Dot Commands").

WordStar also has a few special effects available for your printed document, like underlining, boldface, double-printed and over-printed characters, subscripts and superscripts, microspace justification, and pauses in the print operation for special operations. These are available in the ↑***P*** menu, and are called *printing features* or *special effects*.

Most of these special features are available only with certain types of printers. You should find out from your dealer which features are available in your setup.

You can print your document without further ado if you stick to certain "default" settings. Your left and right margins will be exactly as shown on the screen. Your page breaks will occur as shown by the page break display on your screen. Pages will be numbered consecutively from number one.

You can also choose your own settings and control your own pagination, vertical and horizontal placement on the page, character pitch, and paper length. You can change the page number placement (by default, the page number is printed at the bottom center of the page). You can also add *headings* and *footings* that include page numbers (in order to print chapter and page numbers, as in "2-4" for chapter 2, page 4).

To use print settings other than defaults, and to add headings and footings, you have to use the *dot commands*. To use special effects like underlining and boldface, you use the *printing controls*.

The Actual Print Operation

The no-file menu (or the ↑***K*** menu while in edit mode) gives you access to the print operation (***P*** in the no-file menu, or ↑***KP*** from edit mode). With WordStar you can print a file and simultaneously edit another file.

You can start a print operation by typing ***P*** from the no-file menu) or ↑***KP*** while in edit mode. You can stop the print operation by typing another ***P*** or ↑***KP*** (to change ribbon or paper, etc.), and restart it again with another ***P*** or ↑***KP***.

After typing the name of the file to be printed, press RETURN to see the options you have (the ESC key will bypass these options). These options all have default values (usually "no") you can use by simply pressing RETURN:

DISK FILE OUTPUT (Y/N)? ↩

For normal printing, simply type RETURN (a "no" response). You can elect to send a copy of the printed output to a disk file rather than a printer (useful if you have no printer at the moment).

START AT PAGE NUMBER (RETURN for beginning)? ↩

Press RETURN to start at page one, or type the number of the first page to be printed. This allows you to re-start the printer after a paper jam and print only the latter portion of a document.

STOP AFTER PAGE NUMBER (RETURN for end)? ↩

Press RETURN to print the entire file, or type the number of the last page to be printed (to print a portion of a file).

USE FORM FEEDS (Y/N)? ↩

Answer ***Y*** if your printer can respond properly to the "form feed" character and advance the page to the top of the next page. Form feeds are quicker than line feeds (with some printers), and they may eliminate the need to change the paper length to match the paper.

Answer with a RETURN (for a "no" response) for most daisy-wheel printers. Normally, WordStar sends the correct number of line feeds to advance the paper properly.

SUPPRESS PAGE FORMATTING(Y/N)? ↩

Press RETURN for normal print operations (a "no" response). You can answer ***Y*** to get a printout of the file without the usual WordStar page formatting, to proofread your dot commands. The dot commands are ignored by the printer if you answer ***Y***.

PAUSE FOR PAPER CHANGE BETWEEN PAGES(Y/N)?*Y* ↩

To print on single sheets of paper that are individually loaded into the printer (e.g., letterhead paper), answer ***Y*** to make the printer pause between pages. WordStar displays a **PRINT PAUSED** message in the status line. To continue type a ***P*** from the no-file menu, or ↑***KP*** from edit mode.

Press RETURN (for a "no" response) if you are printing on continuous form paper.

Ready printer, press RETURN: ↩ (Use ↑***U*** to cancel.)

Make sure your printer is turned on, the paper loaded and positioned, and the "on-line" switch is on (or whatever else your printer requires), then press RETURN.

You can type ***P*** from the no-file menu or type the ↑***KP*** command from edit mode to stop the printer; however, if the printer is printing, it may not stop right away. WordStar will eventually stop the printing operation and display the following message:

TYPE "Y" TO ABANDON PRINT, "N" TO RESUME, ↑*U* TO HOLD:

Pick the appropriate choice: either abandon the print operation by typing ***Y***, or continue printing (after adjusting whatever needs adjustment) by typing ***N***, or hold the printing operation with ↑***U***. If you hold, you can edit another file, or perform other WordStar operations, and then resume printing where you left off by typing ***P*** from the no-file menu or ↑***KP*** from edit mode.

Printing Features

↑***PS*** UNDERLINE START/STOP: insert the underscore start and stop markers (↑**S**) to underline enclosed text when printing the document (if printer can underline). Note that spaces are not underlined, even if they appear with ↑**S** markers. Use the underscore key on your keyboard to replace spaces with an underlined space.

↑***PB*** BOLDFACE START/STOP: insert the boldface start and stop markers (↑**B**) to print enclosed text in boldface type (if printer can print in boldface).

↑***PT*** SUPERSCRIPT START/STOP: insert the superscript start and stop markers (↑**T**) to print enclosed characters as superscripts (if printer handles superscripts).

↑***PV*** SUBSCRIPT START/STOP: insert the subscript start and stop markers (↑**V**) to print enclosed characters as subscripts (if printer handles subscripts).

↑***PD*** DOUBLE-STRIKE START/STOP: insert the double-strike start and stop markers (↑**D**) to double-strike characters when printing them (only if printer can perform double-striking). Double-struck characters are lighter and sharper than boldface.

↑***PH*** OVERPRINT CHARACTER: print the next character over the preceding character (only if printer can backspace).

↑***PX*** STRIKE-OUT TEXT: print dashes (-) over characters enclosed within ↑**X** markers (↑***PX*** commands). This only works if your printer can backspace.

↑***PO*** NON-BREAK SPACE: this character prints as a regular space, but cannot be expanded during justification or line splitting (a regular space may be expanded into two spaces).

↑***PF*** SPECIAL CHARACTER ("PHANTOM SPACE"): on a daisy wheel, this character may be a British pound sign or other symbol, associated with ASCII code 20H (hexadecimal); otherwise, it is a space.

↑***PG*** SPECIAL CHARACTER ("PHANTOM RUBOUT"): on a daisy wheel, this character may be a NOT symbol, double underscore or other symbol, associated with ASCII code 7FH (hexadecimal).

Printing Controls

↑***PY*** RIBBON COLOR: select alternate (usually red) ribbon, if printer has alternate color ribbon selection.

↑***PC*** PRINTING PAUSE: stop printing until started again with a ↑***KP*** command (or ***P*** from no-file menu).

↑***PA*** CHOOSE ALTERNATE PITCH: usually 12 characters per inch (elite style) on daisy wheel printers, or the setting used in a ***.CW*** dot command.

↑***PN*** RETURN TO STANDARD PITCH: usually 10 characters per inch (pica style) on daisy wheel printers, or the setting used in a ***.CW*** dot command.

↑***PK*** LEFT-RIGHT HEADING/FOOTING CONTROL: insert this control in a heading (***.HE***) or footing (***.FO***) dot command to place the heading or footing on the left side of even-numbered pages and on the right side of odd-numbered pages. Note that page numbers will only appear in

the heading or footing if you include the # page number character (e.g., page 4 of chapter 6 might have in its footing ***6-#***, which prints as **6-4**).

↑PQ ***↑PW*** ***↑PE*** ***↑PR***	USER PRINTER FUNCTIONS: these controls let you use special printer functions not included in standard WordStar, such as changing type fonts or activating a sheet feeder.

WordStar Dot Commands

The dot commands control printing, page layout, page numbering, headings, footings, and line height. To specify a dot command, type a dot (. or period) in column 1 of any line, followed by the command, a space, and then a number parameter (or the text of a heading or footing).

Some dot commands are "toggles" that are turned on with a value of one, and turned off with a value of zero. Here are some examples of dot commands:

.MT 6	(Margin at top set to 6 lines.)
.OP	(Omit page numbers during printing.)
.UJ 0	(Turn OFF microspace justification.)
.BP 1	(Turn ON bi-directional printing.)

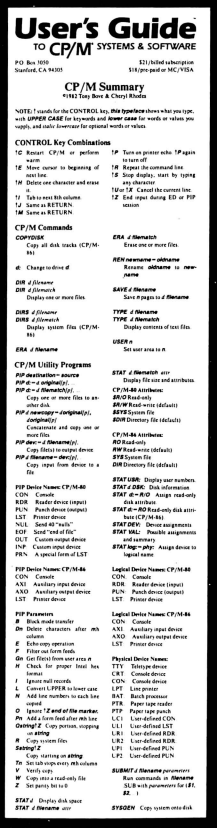
The following chart is a summary of dot command default settings:

	Dot Command	Default Setting
.LH	Line Height	6 lines per inch
.PL	Paper Length	66 lines
.MT	Margin at Top	3 lines
.MB	Margin at Bottom	8 lines
.HM	Heading Margin	2 lines
.FM	Footing Margin	2 lines
.PC	Page Number Column	center
.PO	Page Offset	8 col. (4.5 in.)
.PA	New Page	Starts a new page
.CP	Conditional Page	Starts a new page based on condition
.HE	Heading	Default: blank heading
.FO	Footing	Default: page number
.OP	Omit Page Numbers	Default: do not omit page numbers
.PN	Page Number	1
.CW	Character Width	12 standard, 10 alternate
.SR	Subscript Roll	3
.UJ	Microjustify	1 (ON)
.BP	Bi-direct. Printing	1 (ON)
.IG	Comment Line	

CP/M Summary Card: Only $2

A laminated bookmark-sized card with information on BOTH sides: user's commands and utilities, and programmer's utilities. Covers both CP/M-80 and CP/M-86.

Send a **$2.00** check or money order, or Mastercharge/Visa information, to *User's Guide*, P.O. Box 3050, Stanford, CA 94305.


User's Guide TO CP/M SYSTEMS & SOFTWARE

P.O. Box 3050
Stanford, CA 94305

$21/billed subscription
$18/pre-paid or MC/VISA

CP/M Summary
©1982 Tony Bove & Cheryl Rhodes

NOTE: ↑ stands for the CONTROL key, *this typeface* shows what you type, with *UPPER CASE* for keywords and *lower case* for words or values you supply, and *italic lowercase* for optional words or values.

CONTROL Key Combinations

↑C Restart CP/M or perform warm
↑E Move cursor to beginning of next line
↑H Delete one character and erase it
↑I Tab to next 8th column
↑J Same as RETURN
↑M Same as RETURN
↑P Turn on printer echo. ↑P again to turn off
↑R Repeat the command line
↑S Stop display, start by typing any character
↑U or ↑X Cancel the current line
↑Z End input during ED or PIP session

CP/M Commands

COPYDISK
Copy all disk tracks (CP/M-86)

d: Change to drive *d*

DIR d:filename
DIR d:filematch
Display one or more files.

DIRS d:filename
DIRS d:filematch
Display system files (CP/M-86)

ERA d:filename
ERA d:filematch
Erase one or more files.

REN newname=oldname
Rename *oldname* to *newname*

SAVE d:filename
Save *n* pages to *d:filename*

TYPE d:filename
TYPE d:filematch
Display contents of text files.

USER n
Set user area to *n*

STAT d:filematch attr
Display file size and attributes.
CP/M-80 Attributes:
RO/O Read-only
RW/W Read-write (default)
SYS System file
BOTH Directory file (default)
CP/M-86 Attributes:
RO Read-only
RW Read-write (default)
SYS System file
DIR Directory file (default)

STAT USR: Display user numbers.
STAT d:DSK: Disk information
STAT d:=R/O Assign read-only disk attribute
STAT d:=RO Read-only disk attribute (CP/M-86)
STAT DEV: Device assignments
STAT VAL: Possible assignments and summary
STAT logc=phyc Assign device to logical name

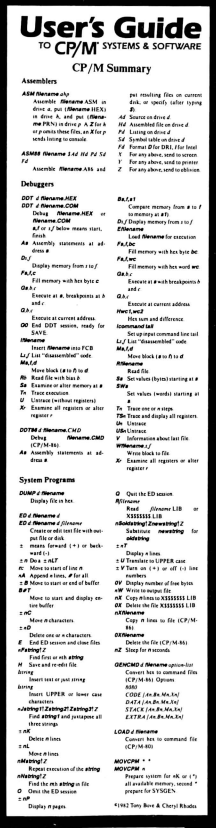
Logical Device Names: CP/M-80
CON: Console
RDR: Reader device (input)
PUN: Punch device (output)
LST: Printer device

Logical Device Names: CP/M-86
CON: Console
AXI: Auxiliary input device
AXO: Auxiliary output device
LST: Printer device

Physical Device Names:
TTY: Teletype device
CRT: Console device
CON: Console device
LPT: Line printer
BAT: Batch processor
PTR: Paper tape reader
PTP: Paper tape punch
LC1: User-defined CON
LL1: User-defined LST
LR1: User-defined RDR
LR2: User-defined RDR
LP1: User-defined PUN
LP2: User-defined PUN

SUBMIT d:filename parameters
Run commands in *filename*
$1,$2 with *parameters* for $$1, $$2, ...

SYSGEN Copy system onto disk


User's Guide TO CP/M SYSTEMS & SOFTWARE

CP/M Summary

Assemblers

ASM filename.ahp
Assemble *filename* ASM in drive *a*, put (*filename*.HEX) in drive *h*, and put (*filename*.PRN) in drive *p*. A,Z for *h* or *p* omits these files, an *X* for *p* sends listing to console.

ASM86 filename.3.4d.H4.P4.S4.F4
Assemble *filename*.A86 and put resulting files on current disk, or specify (after typing *B*):
A4 Source on drive *d*
H4 Assembled file on drive *d*
F4 Listing on drive *d*
S4 Symbol table on drive *d*
F4 Format 0 for DRI, 1 for Intel
Y For any above, send to screen
Y For any above, send to printer
Z For any above, send to oblivion

Debuggers

DDT d:filename.HEX
DDT d:filename.COM
Debug *filename.HEX* or *filename.COM*
A,d or *i,f* below means start, finish.
Aa Assembly statements at address *a*
Dr,f
Display memory from *r* to *f*
Fa,b,c
Fill memory with hex byte *c*
Ga,b,c
Execute at *a*, breakpoints at *b* and *c*
Gr,c
Execute at current address
GO End DDT session, ready for SAVE
Ifilename
Insert *filename* into FCB
Lr,f List "disassembled" code
Ma,f,d
Move block (*a* to *f*) to *d*
Nb Read file with bias *b*
Sa Examine or alter memory at *a*
Tn Trace *n* instructions
U Untrace (without registers)
Xr Examine all registers or alter register *r*

DOTB d:filename.CMD
Debug *filename.CMD* (CP/M-86).
Aa Assembly statements at address *a*
Ba,f,x1
Compare memory from *a* to *f* to memory at *#1*
Dr,f Display memory from *r* to *f*
Efilename
Load *filename* for execution
Fa,f,xc
Fill memory with hex byte *bc*
Fa,f,wc
Fill memory with hex word *wc*
Ga,b,c
Execute at *a*-with breakpoints *b* and *c*
Gb,c
Execute at current address
Hwc1,wc2
Hex sum and difference
Icommand tail
Set up input command line tail
Lr,f List "disassembled" code
Ma,f,d
Move block (*a* to *f*) to *d*
Rfilename
Read file
Sa Set values (bytes) starting at *a*
SWa
Set values (words) starting at *a*
Tn Trace one or *n* steps
TSn Trace and display all registers
Un Untrace
USn Untrace
V Information about last file
Wfilename.x,f
Write block to file
Xr Examine all registers or alter register *r*

System Programs

DUMP d:filename
Display file in hex

ED d:filename d
ED d:filename d,filename
Create or edit text file with output file or disk.
± means forward (+) or backward (-).
±n Do *n* ±MT
#c Move to start of line *#*
±A Append *n* lines, *#* for all
±B Move to start or end of buffer
BuY
Move to start and display entire buffer
±nC
Move *n* characters
±nD
Delete one or *n* characters
E End ED session and close files
nFstring1Z
Find first or *n*th *string*
H Save and re-edit file
Istring
Insert text or just *string*
Istring
Insert UPPER or lower case characters
nJstring1Z,string2Z,string3Z,Z
Find *string1* and juxtapose all three strings.
±nK
Delete *n* lines
±nL
Move *n* lines
nNstring1Z
Repeat execution of the *string*
nNstring1Z
Find the *n*th *string* in file
O Omit the ED session
±nP
Display *n* pages

O Quit the ED session
R filename
Read *filename* LIB or X:SSSSSSS.LIB
nSolstring1,2newstring1,2
Substitute *newstring* for *oldstring*
±nT
Display *n* lines
±U Translate to UPPER case
±V Turn on (+) or off (-) line numbers
0V Display number of free bytes
nW Write to output file
nX Copy *n* lines to X:SSSSSSS.LIB
0X Delete the file X:SSSSSSS.LIB
nX filename
Copy *n* lines to file (CP/M-86)
0X filename
Delete the file (CP/M-86)
nZ Sleep for *n* seconds

GENCMD d:filename option list
Convert hex to command files (CP/M-86). Options are:
CODE (.xx,Bx,Mx,Sx)
DATA (.xx,Bx,Mx,Sx)
STACK (.xx,Bx,Mx,Sx)
EXTRA (.xx,Bx,Mx,Sx)

LOAD d:filename
Convert hex to command file (CP/M-80)

*MOVCPM * **
*MOVCPM * *
Prepare system for *nK* or (*) all available memory, second * prepare for SYSGEN.

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Actual size is 12 inches high by 3 inches wide.

Letters

"Where *DataCast*® left off..."

Enclosed is my $18 for a one year subscription. Thank you and congratulations for taking over where *DataCast* left off. My sincere wishes for your success and the future success of *User's Guide*.

Joel Chaban
Sausalito, CA

Ever since the pause in publication of *DataCast*, and your essay in *InfoWorld*, I've wondered how to reach you...

My best wishes for *User's Guide*. I'm presently trying to learn SpellBinder for its extended macro capabilities, and (almost hopelessly) looking for info on the Centronics 739 printer.

Rev. William J. Margolis
Temple of Man
Venice, CA

Enclosed is a check for a year's subscription to *User's Guide*... Why wasn't the remaining portion of my *DataCast* subscription applied to a *User's Guide* subscription (since *DataCast* ceased publication)?

Kenneth Haller
W. Bloomfield, MI

I paid $18 for *DataCast* and have a cancelled check... To date I have received only a letter stating the continuation of *DataCast* was in jeopardy [*Ed. note: sent by publisher of* DataCast*]*. If I don't qualify for a substitute subscription, please enter one for me and I will pay the subscription when billed.

S. A. Stimac
Seattle, WA

Editors' reply: We've received many supportive letters and some cranky ones mentioning DataCast.

We are not affiliated with DataCast, *although we (Bove & Rhodes) were the editors for its first four issues. Jim Warren is the publisher of* DataCast, *and at one time our employer. We parted with Jim in March, 1982, at his request.*

We are the publishers as well as editors of User's Guide, *and we are committed to providing excellent tutorials and articles on CP/M systems and software on a timely basis. We are a small, privately-held company in a start-up phase of growth, and we expect to become the most popular user's magazine in the CP/M community.*

At this time, User's Guide *is on a bimonthly schedule (every two months); however, subscriptions ($18 pre-paid, $21 billed, for six issues) are based on the number of issues , not the schedule. We handle our circulation system using CP/M computers, but please bear with us in this start-up phase.*

User Groups & RBBS

User's Guide looks good. I need two subscriptions...

I'd like to suggest a few things:

(1) A listing of users' group newsletters would be a valuable service. There are folks like myself using various off-the-wall computers who'd like to connect with others facing similar problems on similar systems... I have a NEC system that is excellent in many respects, but if I were not connected with a users' group I'd certainly have a lot of frustrations.

(2) I want to set up an RBBS (Remote Bulletin Board System) for NEC users. I'm sure there is public domain software that I could use, but so far I am unable to locate it. An article on setting up an RBBS would be welcome.

Your first issue looks great. Long life to you.

R. N. Mistler
San Francisco, CA

We are in the process of setting up our own RCPM/RBBS system (a Remote CP/M software exchange and bulletin board system). One program that is not in the public domain is CBBS, available from Ward Christensen for $50. Contact Ward by calling the Technical BBS (listed in the RCPM list in this issue), or contact the CP/M User's Group (CPMUG), 1651 3rd Ave., NY NY 10028.

Corrections to Issue #2

We seem to have a typo in issue #2, page 43, right side, top paragraph. The phrase "approximately 4.5 inches" should have been "approximately 4/5 of an inch" (four-fifths of an inch).

Those of you who expected to find part two of both the WordStar and SuperCalc tutorials, we sincerely apologize. They will appear in the next issue. The SuperCalc templates for calculating income tax (1982 versions) were not yet available (as of Feb. 20, 1983). The WordStar tutorial simply would not fit. We promise to provide these articles in issue #4.

Next issue will feature tutorials on FMS-80, dBASE II, CBASIC, and more public domain software, with feature articles on disk drives, CP+ and other "shell" programs for CP/M, and CompuServe's electronic mail editor. SuperCalc and WordStar tutorials will also be continued.

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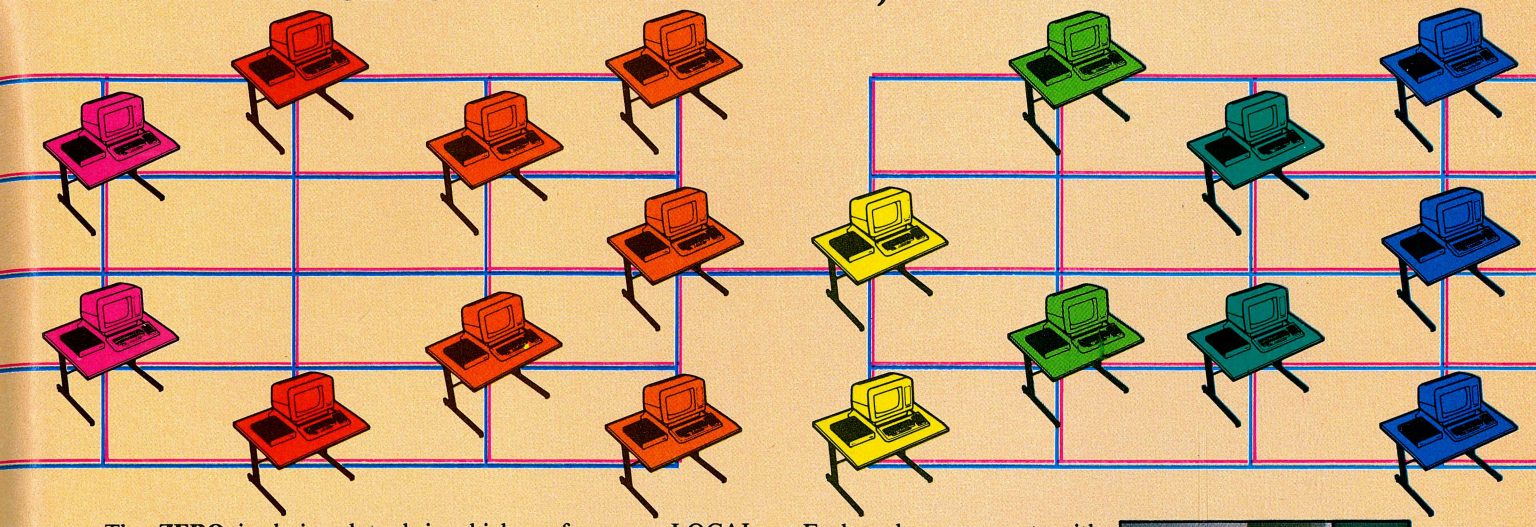
Alspa

ZERO

ANNOUNCING THE HIGH SPEED, LOW COST NETWORK



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- Local Area Networks may be linked through gateways.
- Per Node — 0 to 2 floppies and 0 to 4 hard disks with appropriate Driver Modules.
- Per Node — parallel and/or serial printer.
- Each user can control print routing and/or spooling.
- Each node may reference a file system and/or printer on any other node.
- Each node may have an Autostart Log-on with security access protection.
- Each node may have a FIFO type Electronic Mailbox.
- Each node may operate with MP/M compatible file/ record interlocks, or with special TURBODOS relaxation rules.
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Alspa Computer, Inc.

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